Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Five hundred and seventieth Meeting.

June 12, 1866. — ADJOURNED ANNUAL MEETING.

The PRESIDENT in the chair.

Professor Lovering communicated an unanimous recommendation from the Rumford Committee that the following vote be passed, viz.: — That the Rumford Premium be awarded to Alvan Clark of Cambridge, for his improvements in the manufacture of refracting telescopes, as exhibited in his method of local correction.

Professor Lovering described Mr. Clark's methods of testing and polishing lenses, and recounted the grounds of the Committee's recommendation.

The report was accepted, and on motion of Dr. Jacob Bigelow the vote was unanimously passed.

Five hundred and seventy-first Meeting.

September 11, 1866. — MONTHLY MEETING.

The PRESIDENT in the chair.

The President read letters relative to exchanges; also letters from Professor Rankine and M. Faye in acknowledgment of their election into the Academy.

The President called the attention of the Academy to the recent decease of Professor Henry D. Rogers of Glasgow, of the Associate Fellows, formerly a Resident Fellow; also of Dr. Reuben D. Mussey and Mr. James Hayward of the Resident Fellows.

Professor Winlock read the following communication from Professor Daniel Treadwell: —

The force of every moving body, or that attribute by which a moving body overcomes any resistance opposed to it, is the product of two factors, namely, *mass* and *velocity*. There is an old dispute as to the true value of one of these factors, the velocity; but it may, I think, be at the present time confidently assumed that the value assigned to it by Leibnitz, namely, its square, is the true value in this case. Taking this then to be established, we have a very simple, easy, and direct method of comparing, one with another, the forces of cannon-balls of every possible weight, or rather inertia, as measured by their weight, moving with any velocity that may be impressed upon them. In making this comparison between the forces of the balls used, especially in the most powerful of the vaunted American and English cannon of modern construction, it will be necessary first to establish some standard which may be used as the unit of measure, with which the others are severally compared and tried. To do this I shall take the ball of the old 32-pounder under a velocity of 1,600 feet a second, this being a mass and velocity with which all artillerists are familiar, being that produced by eight pounds of powder, the full charge of this gun; and I shall use the force possessed by this ball under these conditions as the standard, or unit of the standard, by which the force of any others may be compared or measured.

It is very desirable that the unit of every standard of measure should be taken from some simple and familiar object, of the quantity of which we can not only form a conception, but with which we have a familiar sensible acquaintance. Our common standards of weight and measure have been thus derived, the grain of wheat forming the unit of one, and the human arm and foot that of the other. In the more complex instance of the power of the steam-engine, the strength of the horse furnishes the basis of the standard of measure, and this again is defined in a certain number of pounds raised one foot high against the opposing force of gravitation. It will be at once perceived that, although a 32-pound shot moving with a velocity of 1,600 feet a second may form some image capable of being grasped by the conception, yet we must utterly fail to form a distinct idea of the quantity represented by 32 multiplied by the *square* of 1,600, or of the algebraic symbols $m v^2$, representing the product of a mass by the square of a velocity. It will be seen, however, that we may bring the proposed standard of comparison out of this dark envelope, by changing the factor of the velocity into a physical equivalent taken in a vertical line a certain number of feet high. Thus, instead of saying that the force of a 32-pound shot under a velocity of 1,600 feet a second is numerically represented by $32 \times 2{,}560{,}000$, we may substitute for this last factor the height to which the shot would rise if it were pointed directly upwards *in vacuo*, so that it should be freed from every atmospheric and other resistance except that of gravitation alone. To do this we have only to calculate the height to which a body will rise under the given conditions, and for which we have a very simple formula, —

$\frac{v^2}{2g} = h$, in which v is the velocity of the shot, g the velocity acquired by a body falling one second, and h the height sought;

and we then have our standard unit in pounds raised to a known height. In the case before us we shall find the height to be 40,000 feet; and if we multiply this by the weight of the ball or shot, 32 pounds, we have a product of 1,280,000, or 1,280,000 pounds raised one foot high, as the equivalent of the force of a 32-pound shot moving with a velocity of 1,600 feet a second. We can have no difficulty in forming a conception of this amount of force, or power, and applying it as a measure of the force of shot of other weights moving with other velocities. We may, in fact, compare it with the force of a steam engine, reducing both to a common measure in the horse power. Thus, the horse power being 33,000 pounds one foot high in one minute, we have $\frac{1280000}{33000} = 39$; or the 32-pound shot, when it leaves the mouth of its cannon, equal to the work of 39 horses during one minute of time.

Although we may, by this method ascertain, with great exactness, the comparative forces and, consequently, value, of different shot, it requires yet another step of computation to enable us to compare together the value of different guns; to ascertain their relative strength, whether it be derived from the different materials of which they are made, or the peculiar mode or form of their construction. Thus, suppose it to be determined by accurate experiment that a certain ball from a cast-iron Rodman gun has the same force that is possessed by a ball from a wrought-iron coil gun. This fact can give no warrant to the inference that the cast iron is equal in strength to wrought iron, or that a certain method of casting produces a gun of equal value and efficiency to guns made of forged coils. It may be, and must be in this case, that a much greater weight of the inferior metal is required to produce the strength supplied by a smaller amount of the better metal.

To supply the deficiency of the computation thus pointed out, and extend the proposed standard so as to become a measure of the strength of the gun as well as of the force of the shot, we shall find to require but a moment's attention. Having already seen that our standard 32-pound shot has a force of 1,280,000 pounds one foot high (32 × 40,000), if we divide this product, representing the strength of the whole gun, by the weight of the metal of which the gun is made up in pounds, we shall obtain the strength, or work which may be done by each pound of which the gun is constituted. We shall find the result of this computation (the weight of our standard 32-pounder being 7,500 pounds) to be ($\frac{1280000}{7500} = 171$) 171 pounds, in shot, raised one foot high by every pound of metal which forms the body of our standard gun.

By this form of computation we may compare, numerically, the strength of one gun with another, and assign to each the true value derived from its peculiar metal, or the method employed in its construction, free from all adventitious strength that may be supplied by a mere increase of mass or quantity of material. The accuracy of the result will of course depend upon the experimental determination of the weight of the shot and the velocity which the gun may be relied upon to enable us actually to produce and practise, without exceeding the limits of the strength of the gun.

Dahlgren.

I now proceed to the application of these forms of computation to the guns now most relied upon in the American and English service. First the cast-iron ten-inch gun known in this country as the ten-inch Columbiad, and described as follows: —

Diameter of bore,	10 inches.
Weight of gun,	15,059 pounds.
Weight of shot,	128 "
Charge of powder,	18 "
Initial velocity of shot,	1,044 feet.

From these several elements the following results are obtained by the mode of computation before pointed out.

Height to which the shot will rise if pointed directly upward, *in vacuo*, 17,030 feet.

Force in pounds raised one foot high, 2,179,840.

Force compared with the 32-pound shot under a velocity of 1,600 feet a second, this being taken as 1, 1.7.

Force in number of horses working one minute of time, 66.2.

Number of pounds (in shot) raised one foot high, by each pound in the weight of the gun, 144.7.

Rodman.

Passing from this to the giant of the service, the Rodman fifteen-inch gun, which gives the following elements to be subjected to computation: —

Diameter of calibre,	15 inches.
Weight of gun,	49,099 pounds.
Weight of shell,	315 "
Charge of powder,	50 "
Initial velocity of shot,	1,118 feet.

From which we obtain: —

Height to which the shot will rise *in vacuo*, 19,530 feet.

Force in pounds raised one foot high, 6,051,950.

Force compared with the 32-pound shot under a velocity of 1,600 feet a second, this being taken as 1, 4.80.

Force in number of horses working one minute, 186.4.

Number of pounds (in shot) raised one foot high by each pound in the weight of the gun, 125.

Next let us examine the 300-pounder coil gun, as constructed by Sir William Armstrong. This is described as follows: —

Diameter of calibre,	10¼ inches.
Weight of gun,	26,880 pounds.
Weight of shot,	300 "
Weight of charge,	60 "
Initial velocity of the shot,	1,500 feet.

From which we obtain the following: —

Height to which the shot will rise if fired *in vacuo* directly upwards, 35,156 feet.

Force in pounds raised one foot high, 10,546,800.

Force compared with a 32-pound shot, being taken as 1, 8.24.

Force in number of horses working one minute, 319.

Number of pounds raised one foot high (in shot) for each pound of metal in the gun, 392.

The last gun that I propose to examine is the Armstrong coil gun, throwing a 600-pound shot. Described as follows: —

Diameter of calibre,	13¼ inches.
Weight of gun,	49,280 pounds.
Weight of shot,	600 "
Charge of powder,	100 "
Initial velocity,	1,400 feet.

These elements give the following results: —

Height to which the shot will rise, if fired *in vacuo*, 30,625 feet.

Force in pounds raised one foot, 18,375,000.

Force, a 32-pound shot taken as 1, 14.35.

Force in number of horses one minute, 556.8.

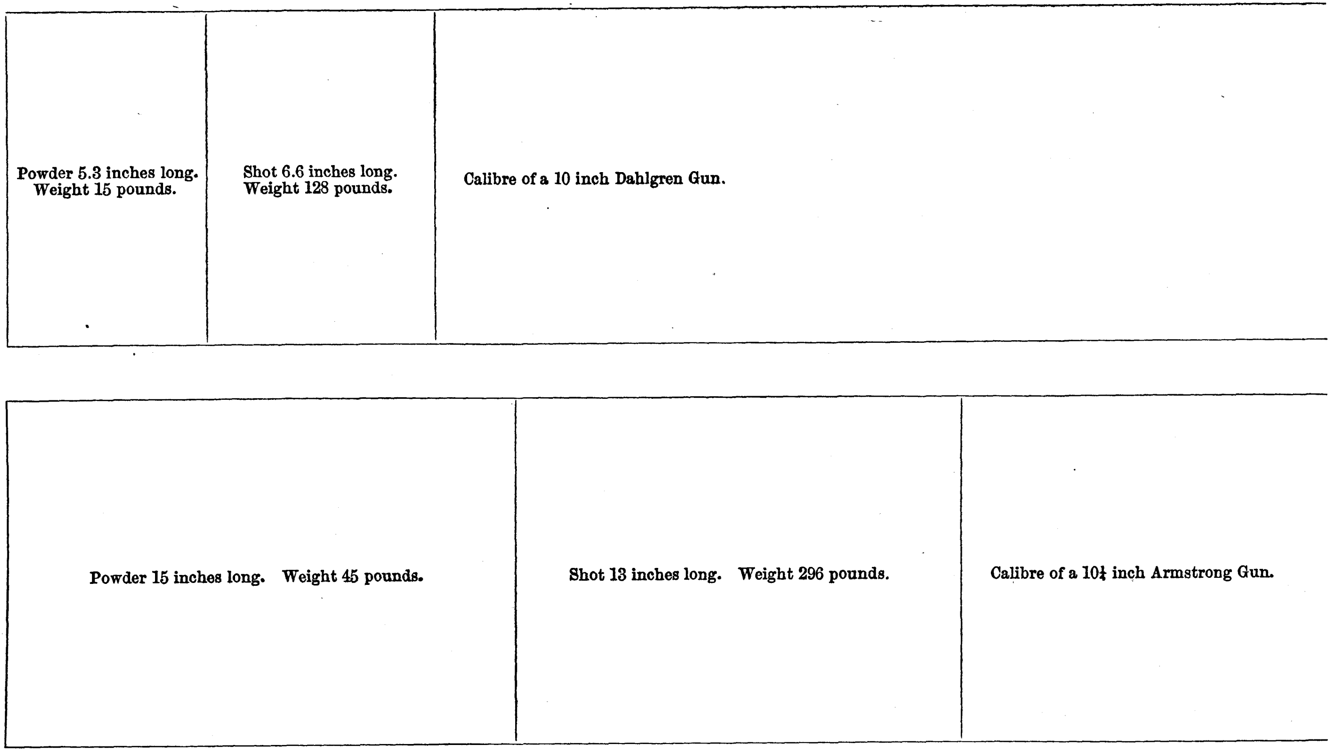
Number of pounds raised one foot high (in shot) by each pound of metal in the gun, 372.8.

The foregoing facts are comprised in the following table: —

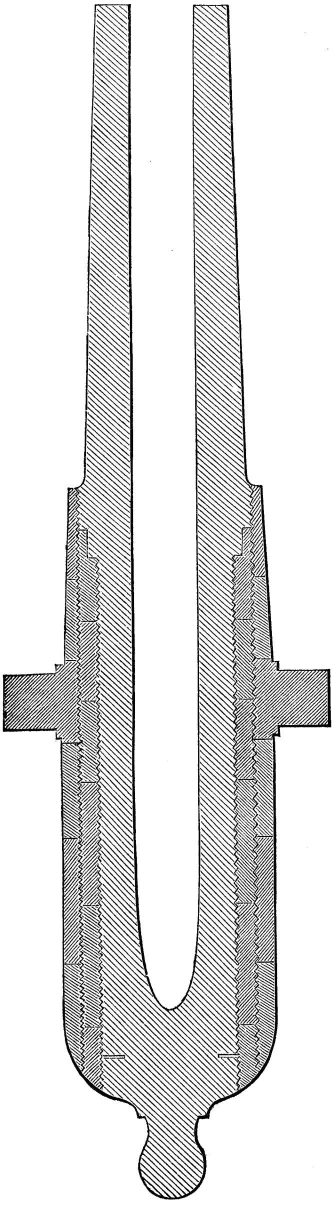
1. Description, or Kind of Gun.	2. Weight of Gun.	3. Weight of Shot.	4. Weight of Powder.	5. Initial Velocity of Shot.	6. Height to which the Shot would ascend if fired upwards *in vacuo.*
	lbs.	lbs.	lbs.	ft.	
Old 32 Pounder	7,500	32	8	1,600	40,000
10 Inch Columbiad	15,059	128	18	1,044	17,030
15 Inch Rodman	49,099	315	50	1,118	19,530
300 Pounder Armstrong . . .	26,880	300	60	1,500	35,156
600 Pounder Armstrong . . .	49,280	600	100	1,400	30,625

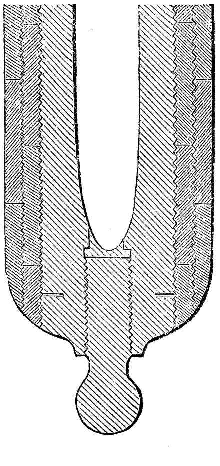
1. Description, or Kind of Gun.	7. Force in Pounds raised 1 Foot.	8. Force compared with a 32-lb. Shot under a Velocity of 1,600 ft. a Second (as Unity).	9. Force in number of Horses working 1 Minute.	10. Number of Pounds of Shot raised 1 Foot by each Pound of Metal in the Gun.
Old 32 Pounder	1,280,000	1.00	39.0	170.7
10 Inch Columbiad.	2,179,840	1.69	66.0	144.7
15 Inch Rodman	6,151,950	4.73	186.4	125.3
300 Pounder Armstrong . . .	10,546,800	8.24	319.6	392.4
600 Pounder Armstrong . . .	18,375,000	14.35	556.8	372.8

It should be borne in mind that the increase of resistance occasioned by rifling is not taken into the account, although it makes an important item against the Armstrong guns.


Powder 5.3 inches long.
Weight 15 pounds.
Shot 6.6 inches long.
Weight 128 pounds.
Calibre of a 10 inch Dahlgren Gun.
Powder 15 inches long. Weight 45 pounds.
Shot 13 inches long. Weight 296 pounds.
Calibre of a 10¼ inch Armstrong Gun.

These figures exhibit (in a sensible form) the calibres, and the lengths of the charges of powder, as given in the preceding table, and used in the Columbiad and Armstrong guns respectively.





Form and proportions intended to be given to a rifled gun by Mr. Treadwell in the year 1863. Experiment alone can determine the choice between the two forms of breech.

The President communicated, by title, the following paper, with some remarks upon Mr. Mann's botanical explorations in the Sandwich Islands.

Enumeration of Hawaian Plants. By HORACE MANN.

During a visit to the Hawaian Islands, made for the purpose of studying especially the Botany of the Group, and which extended from the 4th of May, 1864, to the 18th of May, 1865, I botanized over five of the largest of these islands, and brought together a collection which forms the basis of the following *Enumeration.* In its preparation I have been permitted to examine the other collections of Hawaian plants in the Gray Herbarium; namely, that by the United States South Pacific Exploring Expedition under Commodore Wilkes, — the fullest hitherto made in these islands; a set of the specimens gathered by Jules Remy under the auspices of the Paris Museum, given by that institution; some of Macrae's plants, given by the London Horticultural (now Royal Horticultural) Society; and a few of Gaudichaud's, Chamisso's, Douglas's, and Nuttall's. These materials, and all his own memoranda upon them, were freely offered to my use by Professor Gray, without whose friendly encouragement this enumeration would never have been undertaken, and could not have been accomplished.

The botanists who have collected at the Hawaian Islands, so far as known to me, are as follows: —

DAVID NELSON, who accompanied Captain Cook on his third voyage, and collected at the Islands in 1778 – 1779. The plants collected by him are stored at the British Museum, and, excepting a few *Labiatæ*, have scarcely been examined until recently.

ARCHIBALD MENZIES, a most indefatigable botanist and collector, visited the Islands with Vancouver in 1792, 1793, or 1794, or perhaps in each of these years, and made large and valuable collections, mostly on Hawaii. Sets of his plants are in the Hookerian, Smithian, and Banksian Herbaria.

ALBERT CHAMISSO accompanied Kotzebue in the voyage of Romanzoff, and collected principally on Oahu, late in each of the years 1816 and 1817. He published notes and descriptions of new species in the *Linnæa,* in conjunction with Schlechtendal. FREDERICK ESCHSCHOLTZ was the physician of the expedition.

CHARLES GAUDICHAUD, as botanist of the expedition under Freycinet, in the Corvettes "Uranie" and "Physicienne," visited the Islands in August, 1819. He returned to the Islands on the "Bonite" in 1836. The results of his first expedition were published as the *Botanique du Voyage de l'Uranie*, in 1826 (as on title-page, but really not appearing till 1830), in 1 vol. 4to, with a folio atlas. Of the collections of the second visit a few plates of Hawaian plants appeared in a folio atlas (*Bot. Voy. Bonite*, bearing no date), without descriptions, or any clew to localities. The lower Cryptogams were elaborated and in part figured by the late Dr. Montagne in the same work.

JAMES MACRAE collected for the London Horticultural Society, in Brazil, Chili, and the Hawaian Islands, which last he visited in 1825. His specimens were mainly distributed to the herbaria of Bentham, Hooker, Lindley, and De Candolle.

MESSRS. LAY & COLLIE, who accompanied Captain Beechey during the Voyage of the "Blossom," visited the Islands in 1826 – 1827, and made the collections which formed the basis of the botany of this voyage by Hooker and Arnott.

FRANCIS JULIUS FERDINAND MEYEN accompanied Captain W. Wendt, on the Prussian vessel "Princess Louise," and visited these islands in 1831. After his death, descriptions of species collected by him were published as a volume of the Nov. Act. Acad. Cæs. Leop.-Carol. Nat. Cur., in 1843, here cited as the *Reliquiæ Meyenianæ.*

DAVID DOUGLAS, as collector sent out by the London Horticultural Society to N. W. America, closed his most important explorations by a visit to the Hawaian Islands, which he reached in the last week in the year 1833. He immediately went to Hawaii, where he collected until the 12th of May, when he met a violent death on the flanks of Mauna Kea. His collections are mainly in the herbaria of the Royal Horticultural Society, and of Hooker, Bentham, and Lindley.

BARCLAY was botanist on the "Sulphur," commanded by Sir Edward Belcher, and visited the Islands in 1837 or 1839.

Rev. JOHN DIELL was American Seaman's Chaplain at Honolulu, and sent small collections to Prof. Asa Gray, which he communicated to Sir W. J. Hooker.

W. D. BRACKENRIDGE and CHARLES PICKERING made almost all the botanical collections on the United States South Pacific Exploring Expedition, under command of Charles Wilkes, at least those at the

Hawaian Islands, which were visited in 1840. The Polypetalæ were published in full in the Botany of the Expedition by Gray, who has also published new species of Monopetalæ in Vols. IV., V., and VI. of the Proceedings of this Academy. But few of the Apetalæ have yet been noticed. The Ferns, by Brackenridge, were published as a separate volume of the Botany of the Expedition; but nearly the whole of the edition was destroyed by fire. Another partially published volume comprises the Mosses by Sullivant, the Lichens by Tuckerman, and the Algæ by the late Professors Bailey and Harvey.

NUTTALL visited the Islands in 1835, from the Northwest Coast, and made a small collection. Most of his specimens are in the Hookerian Herbarium; a few probably in that of the Philadelphia Academy. He published notes and descriptions of some Hawaian *Compositæ*, *Lobeliaceæ*, and *Vacciniecæ* in the Transactions of the American Philosophical Society.

JULES REMY went to the Islands under the auspices of the Paris Museum, and made a fine collection in the years 1851 – 1855.

WM. HILLEBRAND, a physician resident in Honolulu, has recently sent interesting collections to Kew, among them a new genus of *Begoniaceæ*, which Prof. Oliver has named after its discoverer.

W. T. BRIGHAM, with whom I visited the Islands, aided me constantly in collecting, and remained five months after my return, obtaining several species not in my own collection.

The Hawaian Islands lie just within the northern tropic, between 18° 55′ and 22° 20′ N., and 154° 50′ and 160° 40′ W. Their climate is not extreme, being much moderated by the N. E. trade winds, which blow pretty steadily for three fourths of the year. The mean annual temperature at Honolulu is about 79° Fahr.; that of the summer, or from May to October, about 81°, and that of the remaining half-year, or winter months, about 75°; the thermometer ranging mostly between 60° and 86°. Lahaina, under the lee of the mountain of West Maui, and Waimea, in the same relative position to the mountain of Kauai, are the two hottest places, while on the summits of the highest mountains the snow persists through nearly the whole year. The snow descends on the flanks of the high mountains to a level of 6,000 or 7,000 feet above the sea, at least in cold winters, but never lies at that elevation long, quickly retreating upward with the return of a warm day.

The group comprises thirteen islands, only seven of which, however, are of any considerable size. These extend in a curved line from E. S. E. to W. N. W., about 600 miles in length. Their superficial area is about 6,500 square miles; the largest island, which is also the most easterly one, *Hawaii*, being about 100 miles long, by 80 or 90 miles wide, of an irregular oval shape. It also presents the highest mountains of the group, as well as of the Pacific, — Mauna Kea being 13,980 feet, and Mauna Loa, 13,760 feet; Hualalai somewhat exceeds 8,000 feet.

The next island to the west, *Maui*, is the next in size also. It consists in fact of two islands, joined by a low sandy isthmus, so low that more than one vessel has been wrecked by attempting to pass between them, mistaking the gap for the Molokai Passage, next westward. The eastern end of Maui is composed of the mountain Haleakala, somewhat exceeding 10,000 feet in height. West Maui is about 6,500 feet high; its mountain is known as Eeka; several of its highest portions also bear distinctive appellations.

Molokai lies next to the westward, but is the fifth in size. The highest point is near the eastern end, and perhaps reaches 3,500 feet.

Lanai lies a few miles S. S. W. from West Maui, and is the sixth in size. It probably does not exceed 2,500 feet in height.

Oahu, west of Molokai, is the fourth in size. Its mountains are two somewhat parallel ridges of unequal length, lying nearly east and west, the northern one twice the length of the southern. The northern ridge is partly divided by Nuuanu Valley, the mountains to the east taking the name of their highest peak, Konahuanui; those to the west, the name of Waiolani, the highest peak on that side. Each of these peaks probably a little exceeds 4,000 feet. The farther western end of this range (sometimes called the Waialua Mountains) spreads out to a very considerable breadth, and is extremely difficult of access, so much so that it is probable no white man has ever been to the heart of the region. The southern ridge is known as the Kaala Mountains.

Kauai, the island next west, is the third in size, consisting in great part of a central mountain, 6,500 or 7,000 feet high, with an extensive plateau on its leeward flank, at the height of from 3,000 to 4,000 feet.

Niihau, the most westerly island (excepting a few mere rocks) lies to the S. W. of Kauai, is the seventh as regards size, is in no part above 2,500 feet, and is destitute of forests.

Returning again to *Hawaii*, where on the whole the climatic conditions are the plainest, and the regions of vegetation best defined, we have an island whose shores are the lower slopes of three mountains, the relative position of which is that of the three angles of a nearly equilateral triangle. These mountains enclose an extensive plateau at an elevation of about 5,000 feet. The windward shores and slopes of Hawaii are the most rainy part of the group, in consequence of the high peaks above, which condense the moisture of the trade winds, and keep it almost continually falling. The elevated plateau is dry, as much on account of its sterility, as it is sterile on account of its dryness; for whatever rain reaches it sinks into the porous lava soil as fast as it falls. The low region is comparatively sterile on account of its being cut off by the high intervening peaks from the reach of the trade winds, and its heat quickly evaporates any thin clouds which may drift over it. The higher leeward regions possess of themselves sufficient coolness to condense the moisture of the air into clouds; and it is owing to the protecting influence of the mountain peaks that the clouds are not blown away by the strong trade winds before they deposit their moisture, as is the case in some places. Thus we have a wet region all along the eastern side of the island, and extending around to the south and to the west, until it reaches the base of Hualalai; and this wet region, between the height of 1,500 or 2,000 feet to about 5,000 feet, is the most heavily wooded of the group. The parts between 1,500 feet and the sea level comprise comparatively few species, and but little of the peculiar vegetation. The high and dry mountain tracts, above 4,000 or 4,500 feet, are very distinct in their character and vegetation from either of the regions below. The highest lava summits are nearly destitute of vegetation.

Similar considerations, making allowances for physical contour, &c., explain the similar distribution of wet and dry regions, and of vegetation, on the other islands. Thus, the summit of Haleakala, above 6,000 feet, has the character and nearly the same plants as the higher parts of Hawaii, and its windward slopes are wet and heavily wooded. The high summit stands in the way of the winds in such a manner as to make an eddy to the leeward, where clouds gather every day, and supply sufficient moisture to sustain a forest, while other parts are more frequently cloudless and drier. The summits of West Maui, Oahu, and Kauai, lying between the heights of 4,000 and 6,500 feet, are just in the cloud level, and, being also peaks where denudation has long been active, the soil has become somewhat impervious to moisture, which therefore remains on the surface. The region has a peculiar aspect, which is at once recognized in ascending the mountains. The only forest-tree, the ohia lehua (*Metrosideros polymorpha*) becomes stunted; the trunks are covered with a thick coating of *Mosses* and *Hepaticæ*, which retains the moisture so as to render everything dripping wet; and not more than a dozen species of flowering plants and ferns occur in the whole. Above this, on the mountains of West Maui and Kauai, there is an open tract, where the lehua, one of the largest forest-trees, at an elevation of 2,000 feet, has become dwarfed, a foot or two high, in spreading clumps, but still flowering luxuriantly. In the midst of such clumps are found the violets peculiar to these regions, and in the neighboring tussocks of sedge (an *Oreobolus*) are found the few other plants, which occur here and nowhere else, to the number of eight or nine; also *Drosera longifolia*, thousands of miles from its next nearest known habitat.

The lower parts of the Kaala mountains, and the lower parts of the leeward flank of Kauai, have many characteristics in common, both being somewhat deprived of moisture by high land to the windward.

By far the greater portion of the soil has been formed by disintegration of the lava; the thin sandy soil of those parts which consist of raised coral reefs (as some of the shore regions of Oahu), and that which is formed by the drifting inland of the calcareous beach sands, support a few species which are not found elsewhere.

It is the purpose of this enumeration to give as complete a list as possible of the plants indigenous to the group, inserting also the probably introduced plants which have become thoroughly naturalized. Those which are without doubt indigenous have been left unmarked. Those which are probably of aboriginal introduction are marked with an asterisk (*); the few which are in all probability recent introductions, with a dagger (†).

The specimens which have been distributed, under numbers, from the collection of Mr. Brigham and myself, are referred to by the initials M. & B. The numbers of Remy's plants are cited, as far as they have been met with in the Gray Herbarium. Hillebrand's collection is not here represented fully enough to make it worth while ordinarily to cite his numbers.

Ranunculaceæ.

1. RANUNCULUS HAWAIENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 10. (M. & B. 314.)

2. RANUNCULUS MAVIENSIS, Gray, l. c. p. 11, & *var. β.* (M. & B. 446; Remy, 920.)

Menispermaceæ.

3. COCCULUS FERRANDIANUS, Gaud. Bot. Voy. Freyc. p. 477, t. 101; Walpers, Rel. Meyen. p. 298. *Nephroica Ferrandiana*, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 39. (M. & B. 110.)

Cruciferæ.

4.† CARDAMINE HIRSUTA, Linn.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 50. (M. & B. 311.)

5. LEPIDIUM OWAHIENSE, Cham. & Schlect. in Linnæa, 1, p. 23; Hook. & Arn. Bot. Beech. Voy. p. 78; Walp. Rel. Meyen. p. 250; Gray, l. c. p. 63. The cotyledons, at least in some seeds, are accumbent. (M. & B. 343, 593; Remy, 523, 524.)

6. LEPIDIUM SERRA (sp. nov.): fruticosum, fere glabrum; foliis lanceolatis crebre arguteque laciniato-serratis membranaceis ad apicem ramorum confertis inferne in petiolum gracilem longe attenuatis; pedunculis gracillimis folia subsuperantibus racemos breves corymbosos bracteis filiformibus stipatos gerentibus; floribus longe pedicellatis; siliculis junioribus ovato-rhomboideis stylo apiculatis, maturis oblato-orbiculatis, stylo ex emarginatura minima vix exserto; cotyledonibus accumbentibus. — Hanapepe, Kaüai. — A straggling, much branched shrub, 2 – 3 feet high. The young inflorescence is slightly puberulent. The cotyledons are clearly accumbent! (M. & B. 588.)

7.† SENEBIERA DIDYMA, Pers. Ench. 2, p. 185; Desv. Journ. Bot. 3, p. 164; Gray, l. c. p. 63.

Capparidaceæ.

8. CLEOME SANDWICENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 65. *Cleome spinosa*, Hook. & Arn. Bot. Beech. Voy. p. 78; Walp. Rel. Meyen. p. 251, non Linn.

9. CAPPARIS SANDWICHIANA, DC. Prodr. 1, p. 245; Hook. & Arn. Bot. Beech. Voy. p. 59; Gaud. Bot. Voy. Bonite, t. 55; Gray, l. c. p. 69. (M. & B. 108; Remy, 529.)

Violaceæ.

10. VIOLA KAVAIENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 85.

11. VIOLA MAVIENSIS (sp. nov.): glabra; caudicibus elongatis suffruticosis adsurgentibus stipulis squamaceis ovato-lanceolatis diu persistentibus vestitis apice conferte-foliaceis; foliis rotundatis in petiolos graciles cuneato-decurrentibus adpresse serratis, dentibus glanduliferis; scapis elongatis bibracteatis umbellato-bi-quadrifloris; petalis cæruleis imberbibus sepala lanceolata bis terve superantibus, inferiore latissime saccato. — Top of the mountain of West Maui. — The ascending caudices a foot long, clothed at the summit with densely imbricated ovate-lanceolate acuminate setigerous-dentate stipules. Leaves clustered at the apex of the caudex. Scape 3-8 inches long, bearing two bracts about the middle. Pedicels umbellate from the bracted summit of the scape. Petals dark blue, the lower one very broadly short-saccate. (M. & B. 432.)

12. VIOLA CHAMISSONIANA, Ging. in Linnæa, 1, p. 408; Gray, l. c. p. 86. *V. tracheliifolia*, Ging. l. c. p. 409. (M. & B. 594; Remy, 532.)

13. ISODENDRION PYRIFOLIUM, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 93, t. 8.

14. ISODENDRION LONGIFOLIUM, Gray, l. c. p. 95, t. 9.

15. ISODENDRION LAURIFOLIUM. Gray, l. c. p. 96.

Bixaceæ.

16. XYLOSMA HAWAIENSE, Seem. Fl. Vitiensis, p. 7, adnot. (M. & B. 206; Remy, 536; Hillebrand; Barclay, 1256.)

Pittosporaceæ.

17. PITTOSPORUM CONFERTIFLORUM (Gray, Bot. S. Pacif. Expl. Exp. 1, p. 232, t. 19): foliis crasse coriaceis obovatis supra glabris subtus ramisque novellis lanato-tomentosis; umbella terminali subsessili confertiflora; calyce quinquesepalo majusculo pedicellisque tomentosissimis, sepalis orbiculatis obtusis petalis duplo brevioribus; staminibus tubo petalorum subæquilongis; antheris oblongis; ovario tomentoso stylo æquilongo; stigmate simplici truncato; capsula tuberculato-rugosa; seminibus rugulosis.

Var. β. foliis subtus aurato-tomentosis; calycis lobis angustioribus. — *P. terminalioides*, var. β. Gray, l. c. p. 231. (M. & B. 337.)

18. Pittosporum cauliflorum (sp. nov.): foliis amplis crasse coriaceis obovatis vel elongato-obovatis obtusissimis basi attenuatis supra glaberrimis subtus petiolisque novellis tomentulosis; pedunculis secus caulem infra folia brevissimis paucifloris cum calyce tomentulosis; sepalis late ovatis petalis quintuplo brevioribus; antheris sagittatis; stylo ovario tomentoso triplo breviore; stigmate bilobo; seminibus leviter rugulosis. — Kaala Mountains, Oahu. — A tree, 30 feet or more high, with a trunk 8 or 10 inches in diameter. Leaves from 3 to 8 inches long, by 15 to 30 lines wide. Petiole half an inch to an inch and more in length. Flowers cream-colored or white, 6 lines long, borne far below the leaves on the naked stems. Capsule an inch in diameter, clothed at first with a fine deciduous tomentum. Endocarp orange-yellow. (M. & B. 601.)

19. Pittosporum terminalioides (Planchon, in Herb. Hook.): foliis coriaceis oblongo-obovatis obtusis basi attenuatis subtus (præsertim junioribus) cum inflorescentia brevissima pauciflora tomentosis, pube sæpius ferruginea; pedunculis sæpissime axillaribus; sepalis crassis ovalibus petalis quintuplo brevioribus; staminibus petalis plus dimidio brevioribus; antheris sagittatis; ovario tomentoso stylo æquilongo; stigmate simplici; capsula tomentulosa fere lævi; seminibus scabro-rugosis. — Gray, l. c. p. 231 (*a*). *P. glabrum*, Putterl. Syn. Pittosp. p. 11, pro parte, non Hook. & Arn. (M. & B. 313.)

20. Pittosporum spathulatum (sp. nov.): foliis tenuiter coriaceis spathulatis vel cuneato-oblongis apice rotundato nunc apiculatis ramisque glaberrimis; pedunculis tomentulosis brevibus axillaribus vel infra folia 3 – 7-floris; sepalis late ovatis obtusis; staminibus petalis plus dimidio brevioribus; antheris sagittatis; ovario tomentoso stylo æquilongo; stigmate capitato; capsula glabra fere lævi; seminibus lævibus. — Kaala Mountains, Oahu. — *P. terminalioides*, var.? γ, Gray, l. c. — A small tree, 15 or 20 feet high. Leaves 3 or 4 inches long, by 1 to 1½ wide. Petiole very short. Flowers white or cream-colored, 5 lines long. Capsule nearly smooth. (M. & B. 602; Remy, 572.)

21. Pittosporum glabrum (Hook. & Arn. Bot. Beech. Voy. p. 100, vix Putterl. Pittosp.): undique glabrum; foliis tenuiter coriaceis cuneato-oblongis oblanceolatisve subacuminatis, venulis minus reticulatis; pedunculis brevibus terminalibus seu axillaribus subracemoso-5 – 9-floris; sepalis ovatis acutis petalis quadruplo brevioribus; staminibus tubum petalorum subæquantibus; antheris oblongis; stylo ovario glabro bis longiore; stigmate truncato; capsula globosa tuberculato-rugosa. — Gray, l. c. p. 229. (M. & B. 203.)

22. PITTOSPORUM ACUMINATUM (sp. nov.): foliis chartaceis oblanceolatis acuminatis glaberrimis; pedunculis axillaribus gracillimis petiolum bis superantibus corymboso-5–8-floris; sepalis bracteisque angustissimis subulatis; staminibus petalis plus dimidio brevioribus; antheris sagittatis; stylo gracili ovario tomentoso longiore; stigmate capitato; capsula globosa tomentosa tuberculato-rugosa. — On the mountains above Waimea, Kauai, 3,000 feet. — A small tree, 15 or 20 feet high; branches slender. Leaves 3 to 6 inches long, 6 to 20 lines wide. Petioles about half an inch long. Peduncles 10 to 20 lines long. Bracts and sepals a line and a half long. Flowers about 5 lines long. Capsule much tuberculate-roughened. (M. & B. 603.)

Caryophyllaçeæ.

23. SILENE STRUTHIOLOIDES, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 109, t. 10. (M. & B. 312.)

24. SILENE LANCEOLATA, Gray, l. c. p. 111, t. 10.

SCHIEDEA, *Cham. et Schlecht., Char. Gen. emend.**

Calyx quinquepartitus, persistens. Corolla nulla. Staminodia subpetaloidea 5, hyalina, sepalis opposita. Stamina fertilia 10, imo calyci inserta, quinque sepalis opposita cum basi staminodiorum accreta, quinque alterna breviora. Styli filiformi 3, rarius 4–5–7. Ovarium uniloculare; ovulis plurimis columellæ centrali affixis. Capsula trivalvis, raro 4–5-7-valvis. Semina plurima, estrophiolata. Embryo annularis, albumen farinaceum cingens. — Suffrutices vel herbæ perennes, Sandwicenses, oppositifolii, exstipulati; cymulis thyrsoideo-congestis vel effuse paniculatis, raro cyma pauciflora.

---

* SYNOPSIS. — Reprinted from the Proceed. Bost. Soc. Nat. Hist., Vol. X., 1866.

§ EUSCHIEDEA. Filamenta capillaria. Styli 3, rarius 4–5, intus stigmatosi. — Flores parvi, thyrsoideo-congesti vel effuse paniculati.

* Panicula deliquescens, effusa: sepala acuminata: folia uninervia.

+ Staminodia apice bifida: filamenta longe exserta.

1. S. NUTTALLII, *Hook.*
2. S. DIFFUSA, *Gray.*

+ + Staminodia lanceolata, acuminata: filamenta calyce breviora.

3. S. AMPLEXICAULIS, *sp. nov.*
4. S. STELLARIOIDES, *sp. nov.*

* * Panicula contracta, ramosa, deliquescens: folia trinervia.

5. S. MENZIESII, *Hook.*
6. S. HOOKERI, *Gray.*

* * * Panicula thyrsoidea, contracta, interrupta: folia uninervia.

+ Staminodia apice bifida: filamenta longe exserta.

7. S. LIGUSTRINA, *Cham. et Schlecht.*
8. S. SPERGULINA, *Gray.*

+ + Staminodia apice bifida: filamenta calyce breviora.

9. S. REMYI, *sp. nov.*

25. SCHIEDEA NUTTALLII, Hook. Ic. Pl. t. 649, 650; Gray, l. c. p. 137. *Eucladus suffruticosus*, Nutt. in herb. Hook. (Remy, 547.)

26. SCHIEDEA DIFFUSA, Gray, l. c. p. 138, t. 11. (Remy, 546.)

27. SCHIEDEA AMPLEXICAULIS (H. Mann, in Proceed. Bost. Soc. Nat. Hist. vol. 10, p. 310, Apr. 1866): suffruticosa; foliis oblongo-linearibus obtusis mucronatis uninerviis basi lata auriculata amplexicaulibus; panicula ramosissima patentissima; pedicellis minutissime hirsutis; sepalis ovato-lanceolatis acuminatis scarioso-fibrilloso-marginatis hispidulis enerviis capsula 3-valvi paullo longioribus; staminodiis lanceolatis apice attenuato integerrimis; filamentis brevibus; seminibus lævibus. — "Kauai or Niihau." — Leaves oblong-linear from a wide auriculate and clasping base, one-nerved, obtuse, mucronate, about 2 inches long, and 5–6 lines wide. Panicle compound, diffusely spreading, bracted, about a foot long, its younger parts and the calyx minutely hirsute. Pedicels capillary, 4–8 lines long. Calyx 2 lines long, sepals ovate-lanceolate, acuminate, with scarious and fibrillose margins. Staminodia lanceolate, with an entire attenuated apex. Stamens shorter than the calyx. Capsule few-seeded, nearly equalling the calyx in length, splitting into 3 valves. Seeds smooth. (Remy, 548^bis^.)

28. SCHIEDEA STELLARIOIDES (H. Mann, l. c. p. 310): caule basi suffruticoso ramosissimo; foliis spathulato-linearibus obtusis mucronatis emarginatisve uninerviis, junioribus basi attenuata hirsuto-ciliatis; panicula effusa gracili; pedicellis primum pubescentibus; sepalis attenuato-lanceolatis enerviis capsula 3-valvi paullo longioribus; staminodiis lanceolatis apice attenuato integerrimis; filamentis brevibus; seminibus rugulosis. — On the mountains above Waimea, Kauai. — Bushy and very much branched from a suffruticose base. Finely hirsute in

---

* * * * Thyrsus globosus, nunc tripartitus: folia tripli-quintupli-nervia: staminodia integra obtusa: filamenta brevissima.

10. S. GLOBOSA, *sp. nov.*

§ NOTHOSCHIEDEA. Filamenta complanata subulata. Styli 7, undique stigmatosi. Staminodia integra, obtusa, brevissima: filamenta calyce breviora. — Flores pro genere maximi, perpauci, sepalis subpetaloideis.

11. S. VISCOSA *sp. nov.*

the axils of the leaves and on the inflorescence. Leaves numerous, small, spathulate-linear, entire at the obtuse apex and mucronate, or slightly notched, one-nerved, tapering at the hirsute-ciliate base into a very short petiole. Panicle compound, diffusely branched, bracted. Calyx 2 lines long, the sepals lanceolate, acuminate, rather thick, narrowly scarious-margined, longer than the 3-valved capsule. Staminodia, stamens, etc., as in *S. amplexicaulis*. Seeds few, tuberculate-roughened. (M: & B. 595.)

29. SCHIEDEA MENZIESII, Hook. Ic. Pl. fol. 649, adnot.

30. SCHIEDEA HOOKERI, Gray, l. c. p. 133, adnot.

31. SCHIEDEA LIGUSTRINA, Cham. & Schlecht. in Linnæa, 1, p. 46; Fenzl, in Endl. Atakt. Bot. t. 14, & Ann. Wein. Mus. 2, p. 273; Gray, l. c. p. 133. *Portulacea*, Hook. & Arn. Bot. Beech. Voy. p. 188. (M. & B. 578.)

32. SCHIEDEA SPERGULINA, Gray, l. c. t. 11. (M. & B. 342.)

33. SCHIEDEA REMYI (H. Mann, l. c. p. 310): suffruticosa; foliis inferioribus angustato-linearibus uninerviis fasciculatis, superioribus subulatis; panicula thyrsoidea contracta e cymulis brevibus puberulis compositis; sepalis ovatis obtusis plurinerviis capsulam superantibus; staminodiis apice bifidis; filamentis brevibus; seminibus fere lævibus. — Molokai. — Leaves very narrowly linear, 2 – 3 inches long, a line wide, with smaller ones often fascicled in their axils. Inflorescence a very much crowded thyrsus, minutely pubescent. Sepals ovate, obtuse, many-nerved. Staminodia short, bifid at the apex. Stamens short, of about the length of the staminodia. Ovary ovoid. Styles 4 – 5, rather long. Capsule ovoid, shorter than the calyx. Seeds numerous (30 – 40), small. (Remy, 551.)

34. SCHIEDEA GLOBOSA (H. Mann, l. c. p. 311): humilis; caulibus e caudice herbaceo erectis simplicissimis; foliis inferioribus obovato-lanceolatis sessilibus 3 – 5-plinerviis, superioribus angustioribus parvis tripli-nerviis; cymulis plurifloribus in capitulum terminale globosum raro trifidum longius pedunculatum arcte congestis; sepalis ovatis obtusis infra medium nervatis capsula ovato-lanceolata 4-valvi brevioribus; staminodiis integerrimis obtusis staminibusque calyce 2 – 3-plo brevioribus; seminibus paucis rugulosis. — Oahu. — Herbaceous, pruinose-puberulent on the upper part of the stem and on the inflorescence, otherwise glabrous. The simple branches rising from the base a span to a foot high, bearing 4 or 5 pairs of leaves. The lower leaves obovate-lanceolate from a narrowed sessile base, somewhat fleshy, about

4 inches long, and an inch wide or less, 3 – 5 nerved, the upper diminished into small subulate bract-like 3-nerved leaves, only three fourths of an inch long, and a line and a half wide. The upright stem bearing a compact globose thyrsus of an inch in diameter (rarely with two lateral ones), composed of numerous many-flowered short cymules. Sepals ovate, obtuse, nerved below the middle, a line and a half long, shorter than the ovate-lanceolate capsule. Staminodia very short, blunt, entire, about the length of the stamens. Seeds few, large for the section, and tuberculate-roughened. (M. & B. 580; Remy, 552.)

35. SCHIEDEA VISCOSA (H. Mann, l. c. p. 311): decumbens, suffruticosa, glanduloso-pubescens; ramis adsurgentibus foliosis apice laxe 2–6-floribus; foliis breviter oblongis utrinque acutissimis petiolatis trinervatis demum glabratis; sepalis ovatis acuminatis plurinerviis capsulam 7-valvem superantibus; filamentis calyce brevioribus staminodia late ovata obtusa 3-plo superantibus, iis staminodiorum oppositis latioribus; seminibus plurimis tuberculato-rugulosis. — At three thousand feet elevation, on the mountains of Waimea, Kauai. — This species differs so entirely in its aspect from the rest of the genus, in its almost trailing manner of growth, and in its peculiarly nerved leaves and large flowers (nearly half an inch long, forming a comparatively simple cyme), as to form quite a distinct section. Plant suffruticose, decumbent and spreading with branches 2 or 3 feet long, sending up suberect flowering stems 8 to 12 inches high. Whole plant covered with a glandular pubescence, which is viscous, especially on the peduncles and pedicels. Leaves 1½ – 1¾ inches long, 4 – 5 lines wide, evenly tapering at each end to a sharp point, below into a margined petiole 2 lines long, becoming glabrate on the upper surface with age, nerved with three well-marked veins running from the base to the apex. The peduncled terminal cymes, composed of 2 – 6 flowers on pedicels about 6 lines long, arising from the axils of small (6 lines long and 1½ line wide) floral leaves. The pubescent calyx 5 – 6 lines long, of five subpetaloid ovate-acuminate many-nerved sepals, which enclose and surpass in length the ovate-lanceolate 7-valved capsule. Staminodia widely ovate, obtuse, small in proportion to the size of the flower, a line long and nearly as wide at the base. Stamens 10; those opposite the sepals inserted with the staminodia, the filaments dilated subulate; those alternate narrowly subulate and a little shorter. Styles 7, short at first and stigmatose all round, but becoming longer with age. Seeds borne on a central placenta, very numerous, tuberculate-roughened with short obtuse points. (M. & B. 579.)

ALSINIDENDRON, *H. Mann.*

Calyx quadripartitus, sepalis decussatim imbricatis ovalibus subcarnosis albidis etiam sub anthesi conniventibus, raro cum quinto minimo interno. Petala et staminodia nulla. Stamina 10, margini disci tenuissimæ basi calycis accreti inserta: filamenta filiformia: antheræ lineari-oblongæ, utrinque emarginatæ. Ovarium uniloculare; ovulis plurimis columellæ centrali affixis: styli 4 – 7, breviter filiformes, apice intus stigmatosi. Capsula 4 – 7-valvis, polysperma. Semina estrophiolata. — Frutex Sandwicensis, orgyalis, fere glaber; ramis foliosis; foliis oppositis amplis ovatis ovalibusque cuspidato-acuminatis basi in petiolum subito angustatis eximie trinervatis subeveniis; cymis plurifloribus pedunculatis ex axillis superioribus, floribus subglobosis in pedicellis filiformibus pendulis.

36. A. TRINERVE, H. Mann, l. c. p. 312. — Kaala Mountains, Oahu, at an elevation of about 2,000 feet. Collected probably at the same station by Dr. Hillebrand, in fruit, which proves to be capsular. The generic character is here corrected, or completed in this respect, from a capsule sent from Kew herbarium from Dr. Hillebrand's collection. (M. & B. 582.)

Portulacaceæ.

37. SESUVIUM PORTULACASTRUM, Linn.; Gray, l. c. p. 142. (M. & B. 107.)

38. PORTULACA VILLOSA, Cham. in Linnæa, 6, p. 565; Walp. Repert. 2, p. 234; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 140.

39. PORTULACA SCLEROCARPA, Gray, l. c. p. 141. (M. & B. 340.)

Guttiferæ.

40.* CALOPHYLLUM INOPHYLLUM, Linn.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 218. (M. & B. 121; Remy, 564.)

Ternstrœmiaceæ.

41. EURYA SANDWICENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 209. (M. & B. 524; Remy, 562.)

Malvaceæ.

42. GOSSYPIUM TOMENTOSUM, Nutt. mss.; Seem. Fl. Vitiensis, p. 22 (1865). *G. religiosum*, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 179, non Cavanilles. *G. Sandvicense*, Parl. Sp. Coton. p. 37. t. 6. f. B. (1866). (M. & B. 228; Remy, 567.)

43.† GOSSYPIUM RELIGIOSUM, Linn. Syst. Nat. ex Seem. Fl. Vitiensis, p. 22. adnot. *G. Barbadense*, Hook. & Arn. Bot. Beech. Voy. p. 60; Gray, l. c. *G. Taitense*, Parl. Sp. Coton. p. 39, t. 6. f. A.

44. GOSSYPIUM DRYNARIOIDES, Seem. Fl. Vitiensis, p. 22, adnot. A very well marked species. (Remy, 568?)

45. HIBISCUS TILIACEUS, Linn.; Cav. Diss. 3, t. 55; Gærtn. Fruct. t. 135; DC. Prodr. 1, p. 454. *Paritium tiliaceum*, Adr. Juss. in St. Hil. Fl. Bras. Mer. 1, p. 256; Wight, Ic. Pl. Ind. Or. t. 7; Gray, l. c. p. 178. (M. & B. 86.)

46. HIBISCUS YOUNGIANUS, Gaud. Bot. Voy. Freyc. p. 91 (abs. char.); Hook. & Arn. Bot. Beech. Voy. p. 79; Gray, l. c. p. 174. (M. & B. 598; Remy, 559, 561.)

47. HIBISCUS BRACKENRIDGEI, Gray, l. c. p. 175. (Remy, 560.)

48. HIBISCUS ARNOTTIANUS, Gray, l. c. p. 176. *H. Boryanus*, Hook. & Arn. Bot. Beech. Voy. p. 79, non DC. (M. & B. 530.)

49. ABUTILON INCANUM, Don; Gray, l. c. p. 168. *Sida incana*, Link, Enum. Hort. Berol. 2, p. 204; DC. Prodr. 1, p. 468.

50. ABUTILON MENZIESII, Seem. Fl. Vitiensis, p. 15, adnot.

51. SIDA FALLAX, Walp. Reliq. Meyen. p. 306; Gray, l. c. p. 161. *Sida rotundifolia*, Hook. & Arn. Bot. Beech. Voy. p. 79, non Cav. *Sida Diellii*, Gray, l. c. p. 162. *Anoda ovata*, Meyen, Riese, 2, p. 139. (M. & B. 390, 247, 65; Remy, 554.)

52. SIDA SERTUM, Nutt. in Herb. Hook.; Gray, l. c. p. 163. *Sida rotundifolia*, var., Hook. & Arn. Bot. Beech. Voy. p. 79.

53. SIDA MEYENIANA, Walp. Rel. Meyen. p. 307; Gray, l. c. p. 164. *Sida ulmifolia*, Hook. & Arn. Bot. Beech, Voy. p. 79, non Cav. (M. & B. 31, 238; Remy, 555, 558.)

54.† SIDA RHOMBIFOLIA, Linn.; Gray, l. c. p. 158. (M. & B. 66; Remy, 556.)

55.† MALVASTRUM TRICUSPIDATUM, Gray, Pl. Wright. (in Smithson. Contrib. 3) 1, p. 16; Gray, l. c. p. 148. (M. & B. 18.)

Sterculiaceæ.

56.* WALTHERIA AMERICANA, Linn.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 189. *W. Indica*, Linn. (M. & B. 5; Remy, 569.)

57. WALTHERIA PYROLÆFOLIA, Gray, l. c. p. 190.

57ª.† GUAZUMA TOMENTOSA, H B K., was found by Mr. Brigham.

Tiliaceæ.

58. ELÆOCARPUS BIFIDUS, Hook. & Arn. Bot. Beech. Voy. p. 110, t. 24; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 205. *Beythea bifida*, Endl.; Walp. Repert. 1, p. 365, & 5, p. 121. (M. & B. 125; Remy, 561.)

Zygophyllaceæ.

59. TRIBULUS CISTOIDES, Linn.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 125. (M. & B. 33; Remy, 627.)

Geraniaceæ.

60. GERANIUM MULTIFLORUM, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 311, t. 29.

61. GERANIUM CUNEATUM, Hook. Ic. Pl. t. 198; Gray, l. c. p. 312, t. 29. Var. *a.* MENZIESII, Hook. l. c.; Gray, l. c. (M. & B. 307; Remy, 628.) Var. *β.* HYPOLEUCUM, Gray, l. c. (M. & B. 433.) Var. *γ.* HOLOLEUCUM, Gray, l. c. (M. & B. 429.)

62. GERANIUM OVATIFOLIUM, Gray, l. c. p. 314, t. 30.

63. GERANIUM ARBOREUM, Gray, l. c. p. 315, t. 31.

64.† OXALIS CORNICULATA, Linn.; Gray, l. c. p. 320.

65.† OXALIS MARTIANA, Zucc. Oxal. Nachtr. p. 27. (M. & B. 37.)

Rutaceæ.

66. PELEA CLUSIÆFOLIA, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 340, t. 35; H. Mann, in Proceed. Bost. Soc. Nat. Hist. 10, p. 312. *Clusia sessilis*, Hook. & Arn. Bot. Beech. Voy. p. 80, non Forst. (M. & B. 599.)

67. PELEA SAPOTÆFOLIA (H. Mann, l. c. p. 312): foliis (amplis chartaceis) quaternatim verticillatis elongato-oblongis emarginatis basi subattenuatis supra glaberrimis subtus præsertim ad costam pubescentibus crebre penninerviis chartaceis longiuscule petiolatis; calycis lobis late ovatis petalis ovatis brevioribus; stylo *quadripartito* ovario longiore; capsula. . . . — Kauai, in the valleys of Kealia and Hanalei, on the windward side of the island. (M. & B. 559.)

68. PELEA AURICULÆFOLIA, Gray, l. c. p. 343, t. 36; H. Mann, l. c. p. 313.

69. PELEA KAVAIENSIS (H. Mann, l. c. p. 313): foliis ovalibus supra glaberrimis subtus præsertim ad costam velutino-villosis petiolatis; floribus in axillis solitariis pedicellatis parvis; calycis lobis ovato-rotundatis petalis ovatis dimidio brevioribus; stylo ovario glabro æquilongo;

capsula parva quadripartita glaberrima. — Kauai, on the mountains above Waimea, at the elevation of three thousand feet. — A small tree, fifteen or twenty feet high. (M. & B.)

70. PELEA ANISATA (H. Mann, l. c. p. 314): glabra; foliis chartaceis oblongis obtusis petiolatis; floribus in axillis solitariis raro binis vel ternis brevissime pedicellatis; calycis lobis late ovatis obtusis petalis ovato-oblongis triplo brevioribus; stylo ovarium bis superante; capsula leviter quadriloba. — Kauai, on various parts of the island, but most abundant in the neighborhood of Hanalei. (M. & B. 557.)

71. PELEA OBLONGIFOLIA, Gray, l. c. p. 343; H. Mann, l. c. p. 315. (M. & B. 208, 235, 376, 600.)

72. PELEA ROTUNDIFOLIA, Gray, l. c. p. 344, t. 37; H. Mann, l. c. p. 315. (M. &. B. 209.)

73. PELEA SANDWICENSIS, Gray, l. c. p. 345, t. 37; H. Mann, l. c. p. 315. *Brunellia Sandwicensis*, Gaud. Bot. Freyc. Voy. p. 93, sine descr.; Hook. & Arn. Bot. Beech. Voy. p. 80. (Remy, 622.)

74. PELEA VOLCANICA, Gray, l. c. t. 38; H. Mann, l. c. (M. & B.)

75. MELICOPE CINEREA, Gray, l. c. p. 350, t. 39; H. Mann, l. c. p. 316. (M. & B. 558.)

76. MELICOPE BARBIGERA, Gray, l. c. p. 351, t. 39; H. Mann, l. c. p. 316. (M. & B. 560.)

77. MELICOPE SPATHULATA, Gray, l. c. p. 352; H. Mann, l. c.

78. MELICOPE ELLIPTICA, Gray, l. c. p. 353; H. Mann, l. c. p. 317. (M. & B. 377.)

PLATYDESMA, *H. Mann.*

Flores hermaphroditi. Calyx quadrisepalus, persistens, imbricatus; sepalis rotundatis, exterioribus majoribus interiora æstivatione includentibus. Petala 4, æstivatione late convoluto-imbricata vel convoluta, ampla, obovata, apice recurva. Discus planus, leviter 4-lobus. Stamina 8, disco inserta, infra medium monadelpha; filamentis nudis ovatis seu ovato-lanceolatis crassis; antheræ sagittatæ, facei interiori infra apicem filamenti adnatæ. Ovarium 4-partitum: stylus centralis: stigmate 4-lobo: ovula in loculis 5, amphitropa. Cocci erecti, omnino discreti, subsucculenti, abortu sæpissime dispermi, endocarpio tenui cartilagineo. Embryo . . . . — Arbuscula Sandwicensis, fere glabra, graveolens. Folia opposita, ampla, simplicia, lanceolata vel obovato-lanceolata, obtusa vel acuminata, petiolata. Cymæ axillares pauciflorae, pedicellis 2-bracteolatis. Flores magni, albi.

79. PLATYDESMA CAMPANULATA, H. Mann, l. c. p. 317. — Oahu, on the mountains behind Honolulu, at middle heights. — A small tree. Leaves 5 to 15 inches long. Flowers an inch long. (M. & B. 94.)

80. ZANTHOXYLUM KAVIENSE (Gray, l. c. p. 354; H. Mann, l. c. p. 318): "inerme, glabrum; foliis alternis pinnatis 3-5-foliolatis; foliolis coriaceis ovalibus integerrimis haud punctatis; paniculis axillaribus compositis; fructibus stipitatis"; — floribus tetrameris; calycis lobis ovato-subulatis petalis fl. masc. lanceolatis triplo, fl. fœm. lineari-ligulatis quadruplo brevioribus; antheris ovalibus; ovario solitario. — Kauai. Hawaii. — The fruit has been described from the specimens of the South Pacific Exploring Expedition. I have described the flowers from a specimen, probably of the same species, collected on Hawaii by Remy, but differing in the thinner texture of the leaves, which appear with the flowers. Calyx four-lobed; the lobes ovate-subulate, about three fourths of a line long, in the male flowers thrice shorter than the lanceolate petals: stamens four, a line in length; filaments capillary; anthers oval. In the female flower the sepals are four times shorter than the linear-ligulate petals, which are imbricated in æstivation; stamens reduced to four glands; ovary unilocular, stipitate; stigma globular. (Remy, 614.)

81. ZANTHOXYLUM MAVIENSE (H. Mann, l. c. p. 319): inerme, pube tenuiter velutina cinereum; foliis alternis 3-foliolatis; foliolis coriaceis ovalibus (lateralibus basi hinc excisa valde inæquilateris) integerrimis haud punctatis; paniculis axillaribus; coccis solitariis estipitatis lunulato-ovoideis. — Maui. — The specimen is apparently from an unarmed tree, bearing mature fruit only; it is cinereous with a fine velutinous pubescence, especially on the under surface of the alternate trifoliolate leaves. Petioles fifteen to twenty lines long. Leaflets ovate, truncated at the base; the two lateral ones unequal, the upper base being three lines shorter than the lower, two to two and a half inches long by fifteen to twenty lines wide. Panicle several-flowered. Carpel solitary, estipitate, four to five lines long, lunulate-ovoid, becoming two-valved; the endocarp adnate. Seed solitary, filling the cell. Known only from Remy's collection. (Remy, 615.)

82. ZANTHOXYLUM (BLACKBURNIA) DIPETALUM (H. Mann, l. c. p. 319): inerme, glabrum; foliis alternis 3-9-foliolatis; foliolis coriaceis oblongis vel ovatis integerrimis punctatis; paniculis florum sterilium compositis; petalis 2 ovalibus crassissimis æstivatione valvatis calyce 4-dentato quadruplo longioribus; antheris oblongis: — flores fertiles

fructusque ignoti. — Oahu? — A tree about thirty feet high, entirely glabrous. The specimens furnish immature sterile flowers. Leaves alternate, 3 – 9-foliolate, petioled. Leaflets two to four inches long by seven to twenty lines wide, oblong or oblong-ovate, obtuse, coriaceous, punctate, pinnately veined, entire, equal at the base, and with one or two small (three to nine lines long) foliar bodies arising from just below the lower leaflets, which, were it not for their anomalous position, might be likened to large stipules. Panicles axillary or terminal, cymosely many-flowered, with a very thick and nodose peduncle and axis. Calyx small, less than a line long, four-lobed. Petals only two, oval, valvate in æstivation and remarkably thick, in the bud three or four lines long, probably caducous. Stamens four; filaments short, subulate; anthers oblong. (Collected only by Hillebrand.)

Ilicineæ.

83. BYRONIA SANDWICENSIS, Endl. in Ann. Wein. Mus. 1, p. 184, & Gen. Pl. p. 1093; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 296, t. 26. *Ilex? anomala,* Hook. & Arn. Bot. Beech. Voy. p. 111, t. 25. (M. & B. 205; Remy, 578.)

Celastraceæ.

84. PERROTTETIA SANDWICENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 291, t. 24. (M. & B. 93; Remy, 575, 576.)

Rhamnaceæ.

85. COLUBRINA ASIATICA, Brongn. Rham. in Ann. Sci. Nat. 10, p. 368; Guillem. Zeph. Tait. p. 68. *Ceanothus Asiaticus,* Linn.; Cav. Ic. 5, t. 440; DC. Prodr. 2, p. 30. *C. capsularis,* Forst. Prodr. Fl. Ins. Aust. p. 18. (Remy, 580; W. T. Brigham.)

86. COLUBRINA OPPOSITIFOLIA (Brongn. in Herb. Gray): glabra, inermis; foliis oppositis oblongo-ovatis v. ovalibus integerrimis coriaceis penninerviis; cymis petiolo subæquilongis. — At once distinguished by its opposite entire leaves. (Remy, 581; Hillebrand, 128.)

87. ALPHITONIA EXCELSA, Riessek, in Endl. Gen.; Benth. Fl. Aust. 1, p. 414. *A. zizyphoides,* Gray, Bot. S. Pacif. Expl. Exp. 1, p. 278, t. 22. *A. franguloides,* Gray, l. c. p. 280, t. 22. *Colubrina excelsa,* Fenzl in Hügel, Enum. 20. *Zizyphus pomaderroides,* Fenzl, l. c. *Rhamnus zizyphoides,* Sol. in Forst. Prodr. Ins. Aust. p. 90, no. 510 (absq. char.); Spreng. Syst. 1, p. 768; DC. Prodr. 2, p. 27. *Ceanothus dealbatus,* Dryand. mss. in Herb. Mus. Brit. *Zizyphoides argentea,*

Sol. Prim. Fl. Pacif. p. 378. *Pomaderris zizyphoides*, Hook. & Arn. Bot. Beech. Voy. p. 61. *Rhamnus incana*, Roxb.; Spreng. Syst. Veg. Cur. Post. p. 86? fide spec. Hort. Calc. (Remy, 582, 583, 584.)

88. GOUANIA VITIFOLIA, Gray, l. c. p. 283.

89. GOUANIA ORBICULARIS (Walp. Rel. Meyen. p. 323): ramis erectis v. decumbentibus cum inflorescentia sericeo-pubescentibus vel glabratis; foliis orbiculatis seu oblongis integerrimis coriaceis penninerviis; cymulis axillaribus confertis petiolum haud superantibus; fructibus crasse alatis. — Gray, l. c. p. 284. *G. integrifolia*, Meyen, Riese, 2, p. 156. non Lam. (M. & B. 344.) Var. *β*. pedunculis gracillimis folio longe petiolato paullo brevioribus. (Remy, 586.)

Sapindaceæ.

90. DODONÆA VISCOSA, Linn. Mant. p. 238; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 260; Seem. Fl. Vitiensis, p. 49. *D. spathulata*, Smith, in Rees, Cycl. no. 2; Gray, l. c. p. 261. (M. & B. 308, 239, 410 pro parte.)

91. DODONÆA ERIOCARPA, Smith, in Rees, Cycl.; Gray, l. c. p. 261. (M. & B. 410 pro parte; Remy, 570.)

92.* CARDIOSPERMUM HALICACABUM, Linn., var. *C. microcarpum*, H B K. (M. & B. 380.)

Anacardiaceæ.

93. RHUS SEMIALATUM, Murr. in Comm. Gœtt. 1784, & in Linn. Syst. Veg. ed. 14. *R. Sandwicensis*, Gray, in Bot. S. Pacif. Expl. Exp. 1, p. 369. (M. & B. 412.)

Connaraceæ.

94. CONNARUS? KAVAIENSIS (sp. nov.): arborea, glaber; foliis nunc palmato- nunc pinnato-3-5-foliolatis; foliolis crasse coriaceis ovalibus seu obovatis venis subtus prominulis transverse costatis, terminali sæpe basi inæquali, lateralibus plerumque parvis difformibus margine revolutis (an monstruosis?); pedunculo paucifloro oppositifolio; sepalis 4 minutis incrassatis; folliculo obovato lignescente glabro substipitato; semine atro-nitido exarillato loculum implente, testa crassa crustacea; radicula supera. — Mountains above Waimea, Kauai, 3000 feet. — A tree, 25 or 30 feet high, and glabrous throughout. Leaves palmately or pinnately 3-5-foliolate: leaflets 3-5 inches long, 2-3 wide, the upper surface punctuated with black dots. The reticulations are much imbedded, and therefore not very conspicuous; the two lower and

lateral leaflets are very small, about an inch long, and with the margins strongly revolute (perhaps a diseased state ?). Peduncles opposite the leaves, three to four inches long, and few- (to 8 ?) flowered. As the specimens are only in fruit the flowers are unknown, but the four very small and thick persistent sepals appear to have been slightly imbricated, and about a line long. Follicle quite woody, an inch long, and entirely filled by the very hard black seed, which seems to be inserted along the whole ventral suture, and is entirely without an arillus! Cotyledons thick and fleshy, plano-convex. Radicle short, included, superior. — Only a single tree seen. (M. & B. 581.)

Leguminosæ.

95.† CROTALARIA ASSAMICA, Benth., in Hook. Lond. Journ. Bot. 2, p. 481. (M. & B. 62.)

96.* CROTALARIA SERICEA, Retz.; W. & Arn. Prodr. 1, p. 186.

97.† CROTALARIA LONGIROSTRATA, Hook. & Arn. Bot. Beech. Voy. p. 285. (W. T. Brigham.)

98.† INDIGOFERA ANIL, Linn. (M. & B. 4.)

99.* TEPHROSIA PISCATORIA, Pers.; Guill. Zeph. Tait. p. 62; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 407. (M. & B. 61.)

100. SESBANIA TOMENTOSA, Hook. & Arn. Bot. Beech. Voy. p. 286, excl. loco natali. *Agati tomentosa*, Nutt. in Herb. Hook.; Gray, l. c. p. 409. (Remy, 654, 655; W. T. Brigham.)

101.* SESBANIA GRANDIFLORA, Poir. Dict. 7, p. 127. *Agati grandiflora*, Desv. Jour. Bot. *A. coccinea*, Desv. l. c. (M. & B. 589.)

102. DESMODIUM SANDWICENSE, E. Meyer, Ind. Sem. Hort. Regiomont. 1850, & in Linnæa, 24, p. 230; Gray, l. c. p. 433. — This has very much the aspect of an introduced plant, as it is generally supposed to be, by the residents. (M. & B. 26; Remy, 657.)

103.* DESMODIUM TRIFLORUM, DC. Prodr. 2, p. 334; Gray, l. c. p. 432. (M. & B. 115; Remy, 658.)

104. VICIA MENZIESII, Spreng. Syst. Veg. 3, p. 267; Gray, l. c. p. 420. *V. grandiflora*, Smith, in Rees, Cycl. no. 7. (Remy, 656.)

105. ERYTHRINA MONOSPERMA, Gaud. Bot. Freyc. Voy. p. 486, t. 114; Hook. & Arn. l. c. p. 81; Gray, l. c. p. 444. (M. & B. 394.)

106. STRONGYLODON LUCIDUM, Seem. Fl. Vitiensis, p. 61. *Glycine lucida*, Forst. Prodr. n. 272. *Rhynchosia lucida*, DC. Prodr. 2, p. 387. *Strongylodon ruber*, Vogel, in Linnæa, 10, p. 585; Gray, l. c. p. 446, t. 48. *Mucuna altissima*, Hook. & Arn. Bot. Beech. Voy. p. 81, non alior. (M. & B. 134; Remy, 672.)

107. MUCUNA GIGANTEA, DC. Prodr. 2, p. 405 ; Guill. Zeph. Tait. p. 62 ; Gray, l. c. p. 442 ; Seem. Fl. Vitiensis, p. 59. (Remy, 670.)

108. MUCUNA URENS, DC. Prodr. 2, p. 405 ; Gray, l. c. p. 443. *Dolichos urens*, Linn. (M. & B. 395.)

109. DIOCLEA VIOLACEA, Mart.; Benth. in Ann. Wien. Mus. 2, p. 133 ; Gray, l. c. p. 439 ; Seem. Fl. Vitiensis, p. 57. (Remy, 673.)

110. CANAVALIA GALEATA, Gaud. Bot. Freyc. Voy. p. 486, adn.; Gray, l. c. p. 441 ; Vogel, in Linnæa, 10, p. 584. *Dolichos galeatus*, Gaud. l. c. p. 486, t. 115. *Canavalia Gaudichaudii*, Endl. Syn. Fl. Ins. Aust. in Ann. Wein. Mus. 1, p. 186. Var. β. PUBESCENS, Gray, l. c. p. 441. *C. pubescens*, Hook. & Arn. Bot. Beech. Voy. p. 81 ; Vogel, in Linnæa, 10, p. 584. (M. & B. 393 ; Remy, 664.)

111.* PHASEOLUS TRUXILLENSIS, H B K. Nov. Gen. Am. 6, p. 451. *P. Cummingii*, Benth. Comm. Legum. (in Ann. Wein. Mus.) p. 75. *P. amœnus*, Sol. in Forst. Prodr. Ins. Aust. no. 553, abs. char. *P. rostratus*, Wall. Pl. Asiat. Rar. 1, p. 50, t. 63. (Remy, 674, foliis angustis.)

112.* PHASEOLUS SEMIERECTUS, Linn.; Jacq. Ic. Rar. t. 558. (M. & B. 47.)

113. VIGNA LUTEA, Gray, l. c. p. 452 ; Seem. Fl. Vitiensis, p. 62. *Scytalis anomala*, Vogel, Rel. Meyen. p. 33 ? (W. T. Brigham.)

114. VIGNA OAHUENSIS, Vogel, in Linnæa, 10, p. 585 ; Gray, l. c. p. 450. *V. villosa*, Hook. & Arn. Bot. Beech. Voy. p. 81, non Savi.

115. VIGNA SANDWICENSIS, Gray, l. c. p. 451, t. 50. (M. & B. 445 ; Remy, 675.)

116.* DOLICHOS LABLAB, Linn. Spec. p. 725. (M. & B. 48.)

117.* CAJANUS INDICUS, Spreng. Syst. 3, p. 248 ; Gray l. c. p. 453. (M. & B. 52.)

118. SOPHORA (EDWARDSIA) CHRYSOPHYLLA, Seem. Fl. Vitiensis, p. 66. *Edwardsia chrysophylla*, Salisb.; Gray, l. c. p. 459. (M. & B. 352 ; Remy, 677.)

119. CÆSALPINIA (GUILANDINA) BONDUC, Benth.; Seem. l. c. *Guilandina Bonduc*, Linn. ; Gray, l. c. p. 461. (M. & B. 109.)

120. CÆSALPINIA KAVAIENSIS (sp. nov.) : arborea, inermis; ramis novellis pubescentibus ; foliis abrupte-bipinnatis; pinnulis 3–5-jugis; foliolis oblongis obtusis emarginatisve basi obtusis vel in petiolum brevem attenuatis ; racemis plurifloris ; pedicellis floribus duplo longioribus ; staminibus corollam paullo superantibus ; filamentis hirsutis. — On the leeward verge of the mountains of Kauai. — A small tree with

remarkably durable, very dark-colored wood, the "Uhiuhi" of the natives. Leaves with about 3 pairs of primary pinnæ. Leaflets one or two inches long, ½ to ¾ inch wide, paler underneath, glabrous excepting the base of the midrib below in the young parts. Flowers purple, ¾ of an inch long. (M. & B.)

121. CASSIA GAUDICHAUDII, Hook. & Arn. Bot. Beech. Voy. p. 81; Gray, l. c. p. 463. (M. & B. 13; R. 680, 681.)

122. ACACIA KOA, Gray, l. c. p. 480. *Acacia heterophylla*, Hook. & Arn. Bot. Beech. Voy. p. 81. (M. & B. 78; Remy, 689.)

123.† ACACIA FARNESIANA, Willd. Spec. 4, p. 1083. (M. & B.)

Rosaceæ.

124. RUBUS HAWAIENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 504, t. 56. (M. & B.)

125. RUBUS MACRÆI, Gray, l. c. p. 505, t. 57. (M. & B. 425.)

126. FRAGARIA CHILENSIS, Ehrh.; Gray, l. c. (M. & B. 424.)

127. ACÆNA EXIGUA, Gray, l. c. p. 498. (M. & B. 431.)

128. OSTEOMELES ANTHYLLIDIFOLIA, Lindl. in Trans. Linn. Soc. 13, p. 98, t. 8; Gray, l. c. p. 507. (M. & B. 423.)

Saxifragaceæ.

129. BROUSSAISIA ARGUTA, Gaud. Bot. Freyc. Voy. p. 479, t. 69; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 683, t. 87; Hook. & Arn. Bot. Beech. Voy. p. 84. *B. pellucida*, Gaud. Bot. Bonite, t. 9, sine descr.; Gray, l. c. p. 685. The character of the more or less superior ovary is inconstant: that of the whorled leaves (in threes) in *B. pellucida* appears insufficient to warrant its separation as a distinct species, though, as far as known, it is constant. (M. & B. 320, 421, 529; Remy, 515.)

Droseraceæ.

130. DROSERA LONGIFOLIA, Linn. pro parte; Fries Novit. p. 82; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 100. *D. Anglica*, Huds. Fl. Angl. p. 135; DC. Prodr. 1, p. 318; Hook. Brit. Fl., & Fl. Bor.-Am. 1, p. 81.

Halorageæ.

131. GUNNERA PETALOIDEA, Gaud. Bot. Freyc. Voy. p. 512; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 629, t. 78, 79. (M. & B. 626; Remy, 165.)

Myrtaceæ.

132. METROSIDEROS POLYMORPHA, Gaud. Bot. Voy. Freyc. p. 99, & 482, t. 108, 109.; Hook. & Arn. Bot. Beech. Voy. p. 82; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 562. (M. & B. 72, var. β; 96, var. γ; 96^{a}, var. ζ.) Var. LUTEA: floribus flavis. *M. lutea*, Gray, l. c. p. 560, t. 69, B. (M. & B. 212.)

133. METROSIDEROS RUGOSA, Gray, l. c. p. 561, t. 69, A.

134. METROSIDEROS MACROPUS, Hook. & Arn. Bot. Beech. Voy. p. 83; Gray, l. c. p. 564, t. 70. (M. & B.)

135.† PSIDIUM GUAJAVA, Linn. Spec. ed. 1, p. 470; Gray, l. c. p. 550. (M. & B.)

136.* EUGENIA (JAMBOSA) MALACCENSIS, Linn. Spec. p. 672; Gray, l. c. p. 510. Some trees bear only pure white flowers, though the more common color is red-purple. (M. & B. 119.)

137. EUGENIA (SYZYGIUM) SANDWICENSIS, Gray, l. c. p. 519. This is one of the largest forest trees, growing at times to a diameter of four or five feet at the base. (M. & B. 204.)

Lythraceæ.

138. LYTHRUM MARITIMUM, H B K.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 606. (M. & B. 8; Remy, 632, 633.)

139.† CUPHEA BALSAMONA, Cham. & Schlecht. in Linnæa, 2, p. 363. (Remy, 635.)

Onagraceæ.

140.* JUSSIÆA VILLOSA, Lam.; W. & Arn. Prodr. Fl. Penins. 1, p. 336. *J. octofila*, DC. Prodr. 3, p. 57. *J. octonervia*, Lam.; Walp. in Rel. Meyen. p. 326; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 619. (M. & B. 46.)

Cucurbitaceæ.

141.* LAGENARIA VULGARIS, Ser. in DC. Prodr. 3, p. 299; Seem. Fl. Vitiensis, p. 106.

142.* CUCURBITA MAXIMA, Duch. in Lam. Dict. 2, p. 151; Seem. Fl. Vitiensis, p. 107, adnot.

143. SICYOS (SICYOCARYA) PACHYCARPUS, Hook. & Arn. Bot. Beech. Voy. p. 83; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 650, t. 80. (M. & B. 444; Remy, 537.)

144. SICYOS (SICYOCARYA) MACROPHYLLUS, Gray, l. c. t. 81.

145. SICYOS (SICYOCARYA) CUCUMERINUS, Gray, l. c. p. 652, t. 82. (M. & B. 604, var. γ.)

146. SICYOS (SICYOCARYA) MICROCARPUS (sp. nov.): foliis cordato-rotundis obtuse 4–6-angulatis serratis dentibus mucronulatis supra papilloso-scabridis subtus hispidulo-puberulis; pedunculis masculis elongatis paucifloris, fœmineis brevissimis; fructibus perplurimis pusillis ovato-pyramidatis rostrato-apiculatis inermibus puberulis in capitulum globosum arcte congestis. — Oahu. — Stem slender, strongly angled. Leaves on slender petioles of more than their own length, 1 to 2½ inches in diameter, membranaceous. Male panicles on very slender axillary peduncles, exceeding the leaves in length. Female flowers 30 to 40 in a head; the fruit but 2 lines long, and quite sessile on the apex of a peduncle only 2 or 3 lines long. — Known only from Remy's collection. (Remy, 541.)

Papayaceæ.

147.* PAPAYA VULGARIS, DC. in Lam. Dict. vol. 5, p. 2. *Carica Papaya*, Linn.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 640.

Begoniaceæ.

148. HILLEBRANDIA* SANDWICENSIS, Oliver, in Trans. Linn. Soc. 25, p. 362, t. 46. An interesting new genus, of a single species, first collected by Mr. Baldwin, of Lahaina, W. Maui, in the mountain valleys behind that town, where also Hillebrand obtained his specimens; seen abundantly and collected by us on the mountains of Kauai. (M. & B. 583.)

Umbelliferæ.

149. HYDROCOTYLE INTERRUPTA, Muhl.; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 692. (M. & B. 28.)

---

* HILLEBRANDIA, Oliver, l. c. "Flores monoici. Masculi: Sepala 5. Petala 5, parva, cucullata, sepalis alterna. Stamina indefinita, filamentis liberis, antheris oblongis ellipticisve muticis rima marginali dehiscentibus. Fœminei: Calyx tubo hemisphœrico exalato, limbo perigyno 5-partito. Petala 5, eis fl. masc. similia, perigyna, lobis calycis alterna. Styli 5, distincti, persistentes, lobis calycis oppositi, bifurcati, lobis spiraliter stigmatosis. Ovarium apice liberum, hians, subuniloculare; placentis 5 parietalibus bilamellatis utrinque ovuliferis plus minus basi irregulariter coalitis. Capsula membranacea, vertice exserta, foramine lato inter stylos aperta. Semina indefinita, oblongo-obovoidea, exalbuminosa, testa areolata; embryone cotyledonibus brevibus, radicula obtusa. — Herba habitu omnino *Begoniæ:* differt floribus petaliferis, placentatione atque capsula apice hiante indehiscente."

150. SANICULA SANDWICENSIS, Gray, l. c. p. 705.

151.† DAUCUS PUSILLUS, Michx. Fl. Bor.-Am. 1, p. 164; Gray, l. c. p. 711.

Araliaceæ.

152. HEDERA GAUDICHAUDII, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 719, t. 90. *Aralia trigyna*, Gaud. Bot. Freyc. Voy. p. 474, t. 98. *Panax? Gaudichaudii*, DC. Prodr. 4, p. 253; Hook. & Arn. Bot. Beech. Voy. p. 84. Var. *β*. *Panax? ovatum*, Hook. & Arn. l. c. (M. & B. 379.)

153. HEDERA PLATYPHYLLA, Gray, l. c. p. 720, t. 91. *Panax? platyphyllum*, Hook. & Arn. l. c. (M. &. B. 605.)

154. HEPTAPLEURUM (PTEROTROPIA*) KAVAIENSE (sp. nov.): arboreum; foliis impari-pinnatis, junioribus inflorescentiaque dense furfuraceo-puberulis demum glabratis; foliolis 15–19 coriaceis elongato-oblongis acutiusculis integerrimis basi truncatis brevi-petiolatis; panicula composita; floribus racemoso-umbellatis; umbellis 10–20 floris; petalis per anthesin patentibus staminibusque 6; stylo longiusculo; ovario subsemisupero 4-loculari. — Mountains above Waimea, Kauai, at an elevation of 2000–3000 feet. — A large, soft-wooded tree, often 40 or 50 feet high. Leaves two feet long, leaflets 7 or 8 inches long, 2 inches wide. Flowers nearly half an inch across when expanded. Drupe 5 or 6 lines long, pointed with the sulcate style and stigma. (M. & B. 606.)

155. HEPTAPLEURUM (PTEROTROPIA) DIPYRENUM (sp. nov.): arborescens; foliis impari-pinnatis, junioribus inflorescentiaque dense furfuraceo-puberulis demum glabratis; foliolis 13–15 coriaceis oblongis vel ovatis obtusis integerrimis basi cordatis brevissime petiolatis; panicula composita; floribus racemoso-umbellatis; umbellis 6–12-floris; stigmatibus 2 sessilibus; ovario maxima parte supero biloculari (an semper?). — Lanai. — A small tree, 15 or 20 feet high. Leaves

---

* Ovarium semisuperum. Folia impari-pinnata. — (Stylus aut longiusculus, aut nullus.) — Unless genera are founded upon the foliage merely, these two Hawaiian species must apparently be referred to *Heptapleurum*, Gærtn. (*Paratropia*, DC.), in which, however, they form a marked section, on account of their pinnate leaves. The summit of the ovary is more or less free in several of the genuine species; in one of ours the drupe is about one third, in the other even two thirds superior. One of them has a conspicuous style and a 4-lobed stigma; the other two sessile stigmas, just as Miquel's two sections differ; and one of them is remarkable for the extreme reduction in the number of the carpels.

a foot or more long. Leaflets 3 inches long, 15 to 20 lines wide. Inflorescence (in both species) compound racemose-umbellate, both the primary divisions, or peduncles, and the secondary, or pedicels, umbellate at the apex and racemose below. Immature drupe four lines long. Flowers unknown. (M. & B. 349.)

156. REYNOLDSIA SANDWICENSIS, Gray, Bot. S. Pacif. Expl. Exp. 1, p. 724, t. 92. (M. & B. 607.)

157. TETRAPLASANDRA HAWAIENSIS, Gray, l. c. p. 728, t. 94. (M. & B. 378.)

158. GASTONIA? OAHUENSIS, Gray, l. c. p. 726. A small tree, 15 or 20 feet high, known to the natives as "Ohe mauka" (while *Reynoldsia Sandwicensis* is "Ohe makai"); seen by me in the Kaala mountains, but unfortunately without flower or fruit, so that the genus remains as doubtful as ever: probably it is no *Gastonia*. There are fragments of three other Hawaiian Araliaceæ in the collections.

Loranthaceæ.

159. VISCUM MONILIFORME, Blume. Bijdr. p. 667, & Fl. Jav. Loranth. t. 25; Cham. & Schlecht. in Linnæa, 3, p. 202; Gray, Bot. S. Pacif. Expl. Exp. 1, p. 744. (M. & B. 7.)

Rubiaceæ.

160. COPROSMA RHYNCHOCARPA, Gray, in Proceed. Amer. Acad. 4, p. 48. (Remy, 333.)

161. COPROSMA LONGIFOLIA, Gray, l. c. p. 48. (M. & B. 132.)

162. COPROSMA FOLIOSA, Gray, l. c. p. 48. (M. & B. 531, 609; Remy, 629bis.)

163. COPROSMA PUBENS, Gray, l. c. p. 49. (M. & B. 561.)

164. COPROSMA MENZIESII, Gray, l. c. p. 49. (M. & B. 317, 454, 455; Remy, 334.)

165. COPROSMA ERNODEOIDES, Gray, l. c. p. 49. (M. & B. 453; Remy, 317, 318.)

166. NERTERA DEPRESSA, Banks, in Gærtn. Fr. 1, p. 124, t. 26. (M. & B. 128.)

167.† RICHARDSONIA SCABRA, St.-Hil. (Remy, 319.)

168. PÆDERIA FŒTIDA, Linn.; DC. Prodr. 4, p. 471. (M. & B. 522.)

169. CANTHIUM LUCIDUM, Hook. & Arn. Bot. Beech. Voy. p. 65. *Myonima umbellata*, Hook. & Arn. l. c. p. 86. (M. & B. 346; Remy, 329.)

170. PSYCHOTRIA HEXANDRA (sp. nov.): glabra; stipulis amplis foliaceis ovatis connatis petiolum vix adæquantibus deciduis; foliis oblanceolatis utrinque acuminatis supra viridibus subtus pallidis, venis primariis 10 – 14; cyma decomposita; floribus hexameris; calyce cupuliformi 6-dentato; corolla fauce villosa, limbo tubo subinfundibuliformi triplo breviore; antheris stylisque subinclusis; stigmate bifido. — On the mountains above Waimea, Kauai. — A large shrub. Leaves 3 to 6 inches long, 1 to 1¾ wide, abruptly acuminate at the apex, and tapering to a narrowly cuneate base, paler beneath. Flowers white, a half to three fourths of an inch long. (M. & B. 564, 570.)

171. PSYCHOTRIA GRANDIFLORA (sp. nov.): fere glabra; stipulis caducis; foliis obovatis vel oblongo-ovatis obtusis margine tenuiter revolutis basi in petiolum brevem angustatis coriaceis, venis primariis conspicuis utrinque 6 – 9, venulis reticulatis; cyma 12 – 20 flora minute ferrugineo-puberula; limbo corollæ tubo subinfundibuliformi triplo breviore; antheris stylisque breviter exsertis; stigmate emarginato; fructibus ovalibus 8-costatis calycis limbo parvo cupuliformi coronatis; pyrenis cartilagineis intus planis dorso convexo tricostatis. — On the mountains above Waimea, Kauai. — A large shrub or small tree, 20 feet high. Leaves 2 to 4 inches long, 1 to 2 inches wide, obtuse at both ends, or tapering slightly into the short petiole, dark green. Cyme on a long peduncle, nearly equalling the leaves. Corolla waxy white, three fourths of an inch long, very handsome. (M. & B. 566.)

172. STRAUSSIA KADUANA, Gray, l. c. p. 43. *Coffea Kaduana*, Cham. & Schlecht. in Linnæa, 4, p. 33; Hook. & Arn. Bot. Beech. Voy. p. 86; Walp. in Rel. Meyen. p. 352. (M. & B. 563, 567; Remy, 321, 325.)

173. STRAUSSIA MARINIANA, Gray, l. c. p. 43. *Coffea Mariniana*, Cham. & Schlecht. l. c. *Coffea Chamissonis*, Hook. & Arn. l. c. The only characters upon which this species can be kept distinct from the first are, so far as the specimens now show, the *slightly longer* tube of the corolla, which is *bearded within.*

174. STRAUSSIA HAWAIENSIS, Gray, l. c. p. 43.

175. BOBEA ELATIOR, Gaud. Bot. Freyc. Voy. p. 473, t. 93; Gray, l. c. p. 36. (M. & B. 114; Remy, 336, 337.)

176. BOBEA BREVIPES, Gray, l. c. p. 36. (M. & B. 621.)

177. GUETTARDELLA SANDWICENSIS, H. Mann. *Chomelia? Sandwicensis*, Gray, l. c. p. 38. (M. & B. 341.)

178.* MORINDA CITRIFOLIA, Linn. (M. & B. 225.)

179. GARDENIA BRIGHAMII (sp. nov.): arborescens, inermis; foliis ovatis basi rotundatis breviter petiolatis, costa subtus hispidula; stipulis ovatis acutis deciduis, basi persistente hispida cupuliformi; flore terminali sessili; calycis tubo angulato, limbo 4-partito, lobis verticalibus lineari-lanceolatis foliaceis corollæ hypocraterimorphæ tubum adæquantibus; stigmate clavato; bacca papillosa imperfecte 3 – 6-loculari. — West end of Lanai; also Kaala Mountains, and Nuuanu Valley, Oahu. — Leaves 1 to 4 inches long, 8 to 25 lines wide, obtuse, quite veiny. Sepals at first linear-lanceolate, somewhat wider in fruit, an inch long. Berry slightly ribbed by the decurrent costa of the sepals, rather more than an inch long. Closely allied to *G. Taitensis*, from which it differs in the rounder leaves and longer lobes of the calyx. I take pleasure in dedicating this species to my friend and companion Mr. W. T. Brigham. (M. & B. 348.)

180. GARDENIA REMYI (sp. nov.): arborea, inermis; foliis amplis oblongo-ovatis breviter petiolatis coriaceis; stipulis cupuliformibus truncatis vel breviter utrinque acuminatis tarde deciduis; flore terminali; calycis limbo 4-partito, lobis verticalibus ovatis coriaceis reticulato-venosis tubum corollæ superantibus; corollæ lobis ovatis basi angustatis; bacca papillosa. — Woods on the windward side of Kauai, and on the mountains above Honolulu, Oahu. — A tree, often 40 feet high. Leaves 3 to 8 inches long, 1½ to 3 or 4 inches wide, obtuse at both ends, or shortly acuminate, strongly veined. Lobes of the calyx an inch or more long, nearly twice the length of the corolla-tube. Corolla, as in the preceding species, white and very fragrant, an inch or more in diameter. (M. & B. 565; Remy, 344.)

181. GOULDIA SANDWICENSIS, Gray, l. c. p. 310. *Kadua affinis*, Cham. & Schlecht. in Linnæa, 4, p. 164. Var. TERMINALIS. *Petesia? terminalis*, Hook. & Arn. Bot. Beech. Voy. p. 85. Var. CORIACEA. *Petesia? coriacea*, Hook. & Arn. l. c. Var. HIRTELLA. (M. & B. 131, 382, 416, 418, 526; Remy, 331.)

182. KADUA LAXIFLORA (sp. nov.): fruticosa; ramis pedunculis pedicellisque glaberrimis; foliis chartaceis minute strigosis sessilibus, inferioribus oblongis utrinque acuminatis, superioribus floralibusque cordatis acuminatis; cyma laxe pluriflora; lobis calycis lanceolatis ovario bis longioribus; capsula apice convexiuscula; seminibus immarginatis. — Wailuku Valley, West Maui. — A sarmentose shrubby species. Stem somewhat four-angled. Leaves 4 to 6 inches long, 1½ to 2 inches wide; the floral leaves an inch or more long. Calyx-lobes 2 to 3 lines long, half the length of the corolla. (M. & B. 422.)

183. Kadua centranthoides, Hook. & Arn. Bot. Beech. Voy. p. 85; Gray, l. c. p. 317.

184. Kadua glomerata, Hook. & Arn. l. c.; Gray, l. c. (M. & B.)

185. Kadua cordata, Cham. & Schlecht. in Linnæa, 4, p. 160; Hook. & Arn. l. c.; Gray, l. c. (M. & B. 210; Remy, 352, 353.)

186. Kadua Cookiana, Cham. & Schlecht. in Linnæa, 4, p. 158; Gray, l. c. p. 317.

Var.? elatior: cyma decomposita pluriflora; foliis petiolatis lanceolato-linearibus utrinque acuminatissimis. — Kauai; Molokai. — Probably a luxuriant variety of *K. Cookiana*, with which it agrees in the essential characters, but a much larger plant than Chamisso's, often two feet high, the leaves 6 to 8 inches long, and 6 or 8 lines wide. The cyme is much more ample, but the flowers are hardly larger than those of the original specimens. (M. & B. 569.)

187. Kadua parvula, Gray, l. c. p. 317.

188. Kadua glaucifolia, Gray, l. c. p. 318. (M. & B. 568.)

189. Kadua Menziesiana, Cham. & Schlecht. in Linnæa, 4, p. 160; Gray, l. c. p. 318. *Hedyotis coriacea*, Smith, in Rees, Cycl. 17. *H. conostyla*, Gaud. Bot. Freyc. Voy. p. 147, t. 94. *Kadua Smithii*, Hook. & Arn. l. c. p. 86. (M. & B. 319.)

190. Kadua acuminata, Cham. & Schlecht. in Linnæa, 4, p. 163; Hook. & Arn., l. c. p. 85; Gray, l. c. p. 318. (M. & B. 234.)

191. Kadua petiolata, Gray, l. c. p. 318. (M. & B. 523.)

192. Kadua grandis, Gray, l. c. p. 318. (M. & B. 417; Remy, 350, 351.)

Compositæ.

193. Adenostemma viscosum, Forst. (M. & B. 12; Remy, 263.)

194.† Ageratum conyzoides, Linn. (M. & B.; Remy, 229.)

195. Lagenophora Maviensis (sp. nov.): minutim viscoso-pubescens, scapo valido bracteato e caudice crasso repente; foliis coriaceis cuneatis vel spathulato-oblanceolatis basi breviter vel in petiolum marginatum angustatis versus apicem argute serratis hirtellis demum glabratis; capitulo pro genere maximo; involucri squamis linearibus; ligulis pallide roseis brevibus discum paullo superantibus; acheniis lanceolatis lævibus, rostro brevi glanduloso. — Top of the mountain of West Maui. — Leaves about 2 inches long, 4 to 6 lines wide. The stout, bracted scape, 5 to 10 inches high, bears a single head 6 to 9 lines in diameter. The leafy bracts of the scape are linear-oblanceolate and usually entire. (M. & B. 440.)

196. ASTER (TRIPOLIUM) DIVARICATUS, Nutt., var. SANDWICENSIS, Gray. *A. subulatus*, Less. in Linnæa, 6, p. 120, non Michx.; Hook. & Arn. Bot. Beech. Voy. p. 87. *Trip. subulatum*, var., DC. Prodr. 5, p. 254. *Erigeron multiflorum*, Hook. & Arn. l. c., ex spec. in herb. Hook. (fide Gray, mss. Bot. S. Pacif. Expl. Exp.).

197. VITTADINIA HUMILIS, Gray, in Proceed. Amer. Acad. 5, p. 118. (M. & B. 516; Remy, 244.)

198. VITTADINIA TENERRIMA, Gray, l. c. p. 119. *Aster tenerrimus*, Less. in Linnæa, 6, p. 120. *Tetramalopium tenerrimum*, Nees.

199. VITTADINIA REMYI, Gray, l. c. (M. & B. 373; Remy, 239.)

200. VITTADINIA CHAMISSONIS, Gray, l. c. p. 119. *Erigeron lepidotum*, Less. in Linnæa, 6, p. 502. *E. pauciflorus*, Hook. & Arn. Bot. Beech. Voy. p. 87. (M. & B. 355.) Var.? ARBUSCULA, Gray, l. c.

201. VITTADINIA CONSANGUINEA, Gray, l. c. p. 120.

202. VITTADINIA ARENARIA, Gray, l. c. p. 120. (M. & B. 519.)

203. VITTADINIA CONYZOIDES, Gray, l. c. (M. & B. 532.) Var. DENTATA: foliis majoribus remote dentatis. (M. & B. 361.)

204.† ERIGERON CANADENSE, Linn. (M. & B.)

205.† FRANSERIA TENUIFOLIA, Gray. (M. & B.)

206.† ACANTHOSPERMUM BRASILUM, Schrank, Pl. Rar. Hort. Monac. t. 53. *A. xanthioides* & *A. hirsutum*, DC. Prodr. 5, p. 522. *Centrospermum xanthioides*, H B K. Nov. Gen. & Spec. 1, p. 271, t. 397.

207.† ECLIPTA ALBA, Hask. Pl. Jav. Rar. p. 528; Miq. Fl. Ind. Bot. 2, p. 65. *E. erecta* & *E. prostrata*, Linn. Mant. p. 216, etc. *E. procumbens* & *brachypoda*, Michx. Fl. 2, p. 129. *Cotula alba*, Linn. Syst. Nat. 2, p. 564, et *Verbesina alba*, L.

208. COREOPSIS MAVIENSIS, Gray, l. c. p. 125. (M. & B. 372; Remy, 289.)

209. COREOPSIS (CAMPYLOTHECA) MACROCARPA, Gray, l. c. p. 126. (W. T. Brigham.)

210. COREOPSIS (CAMPYLOTHECA) MACRÆI, Gray, l. c. p. 126. *Campylotheca grandiflora*, DC. Prodr. 5, p. 293. (Remy, 285.)

211. COREOPSIS (CAMPYLOTHECA) COSMOIDES, Gray, l. c. p. 126. (M. & B. 537; Remy, 278.) A large suffruticose species, the elongated herbaceous branches erect and spreading five to eight feet. The heads always pendent at the ends of the naked peduncles, two inches in diameter, and very showy.

212. COREOPSIS (CAMPYLOTHECA) MENZIESII, Gray, l. c. p. 127. *Campylotheca australis*, Less. pro parte? (M. & B. 520; Remy, 290.)

213. Coreopsis (Campylotheca) micrantha, Gray, l. c. p. 127. *Bidens micrantha*, Gaud. l. c. p. 464, t. 85; Hook. & Arn. l. c. *Campylotheca australis*, Less. in Linnæa, 6, p. 509, excl. syn. Forst. & Spreng. *Campylotheca micrantha*, Cass. dict. 51. (M. & B. 450; Remy, 280.)

214. Bidens Sandwicensis, Less. in Linnæa, 6, p. 508. *B. micrantha*, Hook. & Arn. Bot. Beech. Voy. p. 86, non Gaud. l. c. *B. peduncularis*, DC. Prodr. 5, p. 598, non Gaud. l. c. *B. paniculata*, Hook. & Arn. l. c. p. 66. *Adenolepis pulchella*, Less. l. c. p. 511. (M. & B. 541; Remy, 279, 283.) Var. heterophylla, Gray, l. c. p. 128. *B. luxurians*, Hook. & Arn. l. c. p. 86. (Remy, 281.) Var. ovatifolia, Gray, l. c.

215. Bidens Hawaiensis, Gray, l. c. p. 128. (M. & B. 98.)

216.† Bidens pilosa, Linn. (M. & B. 49.)

217.† Bidens chrysanthemoides, Michx. Fl. Bor.-Am. 2, p. 136, non Pursh. *B. helianthoides*, H B K. Nov. Gen. & Sp. 4, p. 230. *B. quadriaristata*, DC. Prodr. 5, p. 595. (Remy, 258bis.)

218. Lipochæta australis, Gray, l. c. p. 129. *Lipotriche australis*, Less. Var. connata, Gray, l. c. *Verbesina connata*, Gaud. Bot. Freyc. Voy. p. 464. *Lipochæta connata*, DC. Prodr. 5, p. 611. (Remy, 271.) Var. decurrens, Gray, l. c. *Microchæta lanceolata*, Nutt. in Trans. Am. Phil. Soc. 7, p. 451. (M. & B. 375, 540, 542.) Var. lobata, Gray, l. c. p. 130. *Verbesina lobata*, Gaud. l. c. p. 464; Hook. & Arn. Bot. Beech. Voy. p. 87. *V. hastulata*, H. & A. l. c. *Lipochæta lobata* & *hastulata*, DC. Prodr. 5, p. 611. (Remy, 273.)

219. Lipochæta subcordata, Gray, l. c. p. 130.

220. Lipochæta calycosa, Gray, l. c. p. 130.

221. Lipochæta lavarum, DC. Prodr. 5, p. 611; Gray, l. c. p. 130. *Verbesina lavarum*, Gaud. Bot. Freyc. Voy. p. 464. (M. & B. 358, 374; Remy, 277.)

222. Lipochæta integrifolia, Gray, l. c. p. 130. *Microchæta integrifolia*, Nutt. in Trans. Am. Phil. Soc. 7, p. 451. (M. & B. 371; Remy, 255.)

223. Lipochæta succulenta, DC. Prodr. 5, p. 611. Gray, l. c. p. 130. *Verbesina succulenta*, Hook. & Arn. Bot. Beech. Voy. p. 87. (Remy, 257, 258.)

224. Lipochæta heterophylla, Gray, l. c. (M. & B. 359.)

225. Lipochæta tenuifolia, Gray, l. c. p. 131. (M. & B. 534; Remy, 276.)

226. Lipochæta micrantha, Gray, l. c. p. 131. *Schizophyllum*

micranthum, Nutt. in Trans. Am. Phil. Soc. 7, p. 453. *Aphanopappus Nuttallii*, Walp. Rep. 2, p. 620. (M. & B. 536; Remy, 245.)

227. LIPOCHÆTA REMYI, Gray, l. c. p. 131. (M. & B. 533; Remy, 260.)

228. ARGYROXIPHIUM SANDWICENSE, DC. Prodr. 5, p. 668; Gray, l. c. p. 136. (Remy, 254.)

229. ARGYROXIPHIUM MACROCEPHALUM, Gray, in Proceed. Amer. Acad. 2, p. 160, & 5, p. 137. — The tuft of linear silvery-pubescent leaves from the short and thick stem is sometimes as much as four feet in diameter, and the compound branching panicle arising from their midst, six or eight feet high, bears innumerable heads of flowers, which are yellow in the disk and purple in the ray. (M. & B.)

230. WILKESIA GYMNOXIPHIUM, Gray, l. c. 5, p. 136. — This looks much like an *Argyroxiphium* raised upon a stem 6 or 8 feet high. The leaves are Yucca-like, whorled, and their connate cup-like bases overlapping one another from below upwards. The compound panicle is one to three feet long, bearing small yellow heads, about half an inch in diameter, on very slender peduncles and pedicels. — Only found on the dry southwestern slopes of the mountain of Kauai. (M. & B. 535.)

231. DUBAUTIA PLANTAGINEA, Gaud. Bot. Freyc. Voy. p. 469, t. 84; Gray, l. c. p. 134. (M. & B. 365; Remy, 237.) Var. LÆVIGATA. *D. lævigata*, Gray, l. c. p. 135. (M. & B. 538.)

232. DUBAUTIA LAXA, Hook. & Arn. Bot. Beech. Voy. p. 87; Gray, l. c. p. 135. (M. & B. 133; Remy, 238.)

233. DUBAUTIA PALEATA, Gray, l. c. p. 135.

234. RAILLARDIA LATIFOLIA, Gray, l. c. p. 132. (H. Mann.)

235. RAILLARDIA SCABRA, DC. Prodr. 6, p. 441; Gray, l. c. p. 133. (M. & B. 366; Remy, 248, 249.)

236. RAILLARDIA LAXIFLORA, DC. Prodr. 6, p. 441; Gray, l. c. p. 133. (Remy, 250; W. T. Brigham.)

237. RAILLARDIA CILIOLATA, DC. Prodr. 6, p. 441; Gray, l. c. p. 133. (M. & B. 517, 518; Remy, 247, 251, 252, 253.)

238. RAILLARDIA HILLEBRANDI (sp. nov.): ramis pubescentibus; foliis ternatis confertiusculis ovatis oblongisve acutis basi subamplexicauli sessilibus trinerviis pubescentibus; paniculis folioso-bracteatis; capitulis elongatis 4–5-floris. — Waimea, Hawaii (U. S. Expl. Exped.; Hillebrand, no. 14). Differs from *R. linearis* in its heads not being cymosely-fascicled, in their larger size, and in the broader and pubescent sessile leaves.

239. Raillardia linearis, Gaud. Bot. Freyc. Voy. p. 469, t. 83; DC. Prodr. 6, p. 440. Gray, l. c. p. 133. (M. & B. 356.)

240. Raillardia Menziesii, Gray, l. c. p. 133. (M. & B. 367.)

241. Raillardia platyphylla, Gray, l. c. p. 134.

242. Raillardia arborea, Gray, l. c. p. 134.

243. Raillardia montana (sp. nov.): fruticosa, orgyalis; ramis patentibus confertiuscule foliaceis; foliis patentibus lanceolato-oblongis acutis 5-nerviis glabris vel minute pubescentibus denticulatis sessilibus plerisque alternis; panicula subsimplici; capitulis longe pedicellatis 15–23-floris. *R. arborea*, var. foliis angustioribus, Gray, in herb. — Hualalai, Hawaii, at 6,000 feet elevation. — A much-branched shrub, differing from the preceding species in its manner of growth, in the thinner leaves, which are smoother, and not closely imbricated; from *R. platyphylla* by its narrower leaves with fewer veins, etc. (M. & B. 521.)

244. Raillardia struthioloides, Gray, l. c. p. 134.

245. Artemisia australis, Less. in Linnæa, 6, p. 522; Gray, l. c. p. 137. Var. Eschscholtziana, Gray, l. c. (M. & B. 539.) Var. Maviensis, Gray, l. c. Var. microcephala, Gray, in herb. (Hillebrand.) — In favorable situations a large shrub, 6 feet high, branching from the base.

246. Gnaphalium luteo-album, Linn. *G. Sandwicensium*, Gaud. Bot. Freyc. Voy. p. 466, fide Gray. (M. & B. 309; Remy, 236.)

247. Senecio Sandwicensis, Less. in Linnæa, 6, p. 526; DC. Prodr. 6, p. 375.

248.† Centaurea Melitensis, Linn. (M. & B. 3; Remy, 294.)

249. Hesperomannia arborescens, Gray, in Proceed. Amer. Acad. 6, p. 554. — The only known *Labiatiflora* from any of the proper Pacific Islands. The genus belongs to the group *Flotowieæ* of Weddell's arrangement of the *Mutisiaceæ;* and is related to *Chuquiraga* and *Doniophyton* on the one hand, and to *Stiftia* and *Anastraphia* on the other. A small tree, about 20 feet high, and divaricately branched, bearing several flower-heads at the ends of the branches. Leaves 3 to 5 inches long, 1 to 1½ inches wide, near the ends of the branches; the heads are 1½ to 2 inches in diameter, with bright yellow flowers and tawny pappus. — Only one tree seen, on the summit of Lanai, at about 2,500 feet elevation. (M. & B. 357.)

250.† Sonchus asper, Linn.

251.† Youngia Japonica, DC. Prodr. 8, p. 149. *Prenanthes Japonica*, Linn. *Crepis Japonica*, Benth. (M. & B. 244.)

Lobeliaceæ.

ROLLANDIA, *Gaud. Bot. Freyc. Voy. p.* 458.*

Calyx tubo ovoideo, lobis abbreviatis æqualibus. Corolla arcuato-gibbosa, a latere compressa, tubo integro superne inflato dorso fisso, calyce multo longiore, limbo quinquepartito subbilabiato, lobis lanceolatis. Columna staminea inferne corollæ postice et lateraliter adnata. Antheræ duæ inferiores barbatæ. Stigma bilobum. Bacca bilocularis, calyce diu persistente coronata. — Frutices lactescentes, Sandwicenses, racemis axillaribus brevibus, pedicellis nudis. Folia integra, sesqui-tripedalia.

252. ROLLANDIA LANCEOLATA (Gaud. l. c.): fruticosa; foliis oblongo-lanceolatis duplicato-dentatis subtus hirtellis utrinque acutis, petiolis sesqui-bipollicaribus; pedunculis petiolo subæquilongis paucifloris; calycis lobis glabris obovatis obtusis tubo ovoideo triplo brevioribus; columna staminea antherisque hirsutis; corolla fere glabra; stigmate nudo; semina minutissime striato-reticulata. — *R. lanceolata,* & var. *grandifolia,* DC. Prodr. 7, p. 344. *R. Delessertiana,* Gaud. Bot. Bonite, t. 75. *Delissea lanceolata,* Gray, in Proceed. Amer. Acad. 5, p. 147. — Oahu. (W. T. Brigham.)

253. ROLLANDIA CRISPA (Gaud. l. c.): fruticosa; foliis obovato-lanceolatis inferne longe attenuatis breviter petiolatis membranaceis fere glabris margine serrulatis undulatis vel integerrimis; pedunculo petiolum adæquante paucifloro; calycis lobis oblongis obtusis subfoliaceis velutinis valde imbricatis ovario æquilongis; columna staminea glabra; corolla cinereo-puberula; stigmate nudo. — *Cyanea? Rollandia,* Gray, l. c. p. 149. — Oahu. (M. & B. 58.)

254. ROLLANDIA HUMBOLDTIANA (Gaud. Bot. Bonite, t. 76): fru-

---

* The diagnostic characters of the four fleshy-fruited genera of Lobeliaceæ peculiar to the Hawaiian Islands may be stated thus: —

ROLLANDIA. Calycis lobi breves. Corolla arcuato-gibbosa a latere compressa. Columna staminea corollæ postice et lateraliter adnata. Caudex fere herbaceus.

DELISSEA. Calycis lobi breves seu brevissimi, sæpius dentiformes. Corolla arcuata, tubo cylindraceo. Columna staminea libera. Arbusculæ columnæformes vel ramosæ.

CYANEA. Calycis lobi foliacei vel prælongi. Corolla arcuata vel rectiuscula. Columna staminea libera. Frutices vel arbores columnæformes.

CLERMONTIA. Calycis lobi corollam æquilongam sub anthesi valvatim includentes, caduci. Columna staminea libera. Arbusculæ ramosæ.

ticosa; foliis lanceolatis vel obovato-lanceolatis inferne attenuatis longiuscule petiolatis fere glabris serrulatis vel integerrimis; pedunculo petiolum adæquante vel superante paucifloro; floribus hirtellis; calycis lobis lanceolatis ovario dimidio brevioribus; columna staminea glabra; stigmate pilis cincto. — Oahu. (W. T. Brigham.) — I have fortunately been able to identify a single specimen, which Mr. Brigham collected, with the figure of this species: as is shown by the description, drawn from the specimen, aided by Gaudichaud's excellent figure, it has characters of value upon which to stand.

DELISSEA, *Gaud. Bot. Freyc. Voy. p.* 459.

Calyx tubo hæmispherico vel turbinato, lobis brevibus sæpius dentiformibus. Corolla arcuata, tubulosa, bilabiata, tubo sæpius dorso fisso, labiis longitudine æqualibus. Columna staminea a corolla libera. Antheræ duæ inferiores barbatæ. Stigma bilobum. Bacca subglobosa, bilocularis. — Frutices vel arbusculæ lactescentes, Sandwicenses, foliis integris vel pinnatifidis, racemis axillaribus, pedicellis sæpe bibracteolatis.

255. DELISSEA CLERMONTIOIDES (Gaud. Bot. Bonite, t. 47): fruticosa, hirtella; foliis coriaceis oblongis utrinque acuminatis creberrime serrulatis supra glabris breviter petiolatis; pedunculis bracteatis paucifloris petiolum adæquantibus vel superantibus; pedicellis pedunculo æquilongis bibracteolatis; lobis calycis brevissimis triangularibus; corolla bipollicari sub-bilabiata; bacca angulato-sphærica apice truncata (pollicari); seminum testa lævissima. — Gray, l. c. p. 147. — This character has been drawn up from a young specimen in the collection of the United States Exploring Expedition, helped out by Gaudichaud's figure.

256. DELISSEA CORIACEA (Gray, l. c. p. 147): "fruticosa, glabra; foliis amplis (pedalibus et ultra) oblongo-lanceolatis coriaceis repando-serrulatis basi acutis longiuscule petiolatis, venulis conspicue reticulatis; racemis plurifloris petiolum haud superantibus; calycis limbo obsoleto seu dentibus 5 minutis instructo; corolla (glabra) pollicari subcurvata." — Kauai. (Remy, 302.)

Var.? β. "foliis spathulato-lanceolatis in petiolum brevem longe attenuatis." — Fruit as large as a cherry. — Haleakala, East Maui. This may be my *D. arborea.*

Var.? γ. PINNATILOBA (Gray, l. c. & in Bot. S. P. Expl. Exped. ined.): "foliis profunde sinuato-pinnatifidis, lobis utrinque 5–7 obtu-

sissimis integerrimis." — Mountains of Kauai. This was doubtfully referred by Gray to *D. Delessertiana,* Gray, l. c., which is *Rollandia Delessertiana,* Gaud. Bot. Bonite, t. 75, which again appears to be identical with *R. lanceolata,* Gaud. I have little doubt that it is a variety of *D. coriacea,* but only some leaves have been collected.

257. DELISSEA OBTUSA (Gray, l. c. p. 148): "fruticosa; ramis junioribus floribusque undique pubescentibus; foliis (5–8-pollic.) membranaceis oblongis serrulatis apice vel utrinque obtusis subtus parce pubescentibus; racemis plurifloris petiolum gracilem haud superantibus; calycis limbo minuto vel fere obsoleto; corolla gracili subpollicari incurva"; columna staminea glabra; seminum testa lævissima nitidiuscula. — Mountains of Maui. (M. & B. 466.)

Var. MOLLIS (Gray, l. c.): "caule crassiori; foliis elongatis (subpedalibus) oblongo-lanceolatis basi in petiolum breviusculum attenuatis supra puberulis subtus molliter pubescentibus; floribus pollicaribus crassiusculis cæruleis." — Mouna Kea, Hawaii.

258. DELISSEA HIRTELLA (sp. nov.): fruticosa, ramosa, hirtella; foliis oblanceolatis utrinque acuminatis crebre serrulatis supra glabris petiolatis; pedunculis paucifloris petiolo brevioribus; lobis calycis lanceolatis ovario multo brevioribus. — Mountains above Waimea, Kauai. — A large branching shrub, 20 feet high, hirsute with short rusty hairs. Leaves 7 to 10 inches long, 2 to 3 wide. Petioles about 2 inches long. Only flower-buds seen, in which the sepals are scarcely a line long. (M. & B. 574.)

259. DELISSEA ACUMINATA (Gaud. Bot. Freyc. Voy. p. 475, t. 76; DC. Prodr. 7, p. 342, non Gray, l. c. p. 148): fruticosa, ramosa; foliis oblongis utrinque acuminatis denticulatis membranaceis pilosiusculis subtus pallidioribus longiuscule petiolatis; pedunculis petiolo brevioribus; pedicellis filiformibus nudis, floribus racemosis; calycis lobis lanceolatis puberulis ovario dimidio brevioribus; corolla (12–16 lin. longa) glabrata; columna staminea hirtella; seminum testa lævissima flava. — Oahu. (M. & B. 233.)

260. DELISSEA ANGUSTIFOLIA (Presl, Prodr. Lob. p. 47): fruticosa, ramosa; foliis lanceolatis acutis serratis, serraturis obtusis, petiolis limbo dimidio brevioribus; pedunculis axillaribus plurifloris petiolo æquilongis; floribus corymbosis; pedicellis filiformibus nudis; calycis lobis dentiformibus ciliolatis caducis; corolla cum columna staminea glabra; seminum testa lævissima nitidiuscula. — DC. Prodr. 7, p. 343. *D. acuminata,* & var. *angustifolia,* Gray, l. c. p. 148. *Lobelia angus-*

tifolia, Cham. in Linnæa, 8, p. 219. — Oahu. (M. & B. 231; Remy, 299.)

261. DELISSEA RHYTIDOSPERMA (sp. nov.): arborescens; foliis lanceolatis petiolatis membranaceis utrinque acuminatis serratis, serraturis acutis; pedunculis axillaribus paucifloris petiolo brevioribus; floribus racemosis; pedicellis nudis; calycis lobis dentiformibus persistentibus; seminum testa valde undulato-rugosa. — Mountains above Waimea, Kauai. — A small tree, glabrous in all parts as far as known. Leaves 3 to 5 inches long, 1 to 1¼ inches wide, thin and somewhat reticulated-veiny. Petioles an inch long or less. Peduncles quite short. The persistent calyx-lobes less than half a line long. Flowers unknown. (M. & B. 576.)

262. DELISSEA ARBOREA (sp. nov.): caule simplicissimo fere glabro; foliis bipedalibus subcoriaceis oblanceolatis superne creberrime serrulatis inferne longe gradatim attenuatis integerrimis sessilibus; pedunculis axillaribus brevibus paucifloris; calycis limbo fere obsoleto; corolla alba fere recta. — Ulapalakua, E. Maui. — Trunk simple, erect, 20 feet high, bearing a large tuft of horizontally spreading leaves at the apex, among the sessile bases of which are the short-peduncled clusters of flowers. (M. & B. 461.)

263. DELISSEA SUBCORDATA (Gaud. Bot. Freyc. Voy. p. 457, t. 77): fruticosa, ramosa, glaberrima; foliis ovatis subcordatis acutis inæqualiter serratis, dentibus acutis, petiolo limbo æquilongo; pedunculis petiolo æquilongis vel brevioribus; pedicellis nudis; calycis lobis brevissimis pilosiusculis; corolla (sesquipollicari) dorso ad medium fissa; bacca turbinata; seminum testa eximie rugosa. — DC. Prodr. 7, p. 342. *D. undulata*, Gray, l. c. p. 148, pro parte. — Kaala Mountains, Oahu; Kauai. (M. & B. 573.)

264. DELISSEA UNDULATA (Gaud. Bot. Freyc. Voy. p. 457, t. 78): fruticosa; caule simplicissimo glaberrimo; foliis ovato-lanceolatis acutis serratis in petiolum limbo dimidio breviorem v. æquilongum angustatis, nunc subcordatis; pedunculis brevibus confertis plurifloris; pedicellis nudis; calycis lobis brevissimis; corolla (subpollicari) dorso ad medium usque fissa; bacca ovoidea; seminum testa læviuscula. — "Kauai" or more probably "Niihau" (Remy, 300$^{\text{bis}}$), where it was also found by Mr. W. T. Brigham.

265. DELISSEA PLATYPHYLLA (Gray, l. c. p. 148): caule fruticoso orgyali petiolisque tuberculis aculeisve conicis mollibus obsitis; foliis sesquipedalibus obovato-oblongis repandis membranaceis glabris petio-

latis; pedunculis axillaribus brevibus crassis paucifloris; pedicellis subpollicaribus nudis; lobis calycis brevibus subulatis; floribus fere bipollicaribus. — Puna, Hawaii, in woods near Hilo. (M. & B.)

266. Delissea racemosa (sp. nov.): fruticosa; foliis oblongo-lanceolatis vel ovato-lanceolatis utrinque acutis minute eroso-crenulatis in petiolum brevem longe attenuatis, supra pilis conicis brevibus raris, subtus albidis pubescentibus venis brunneis; pedunculis folium adæquantibus bracteatis; pedicellis bracteolatis; calycis lobis glabratis oblongis obtusiusculis ovario multo brevioribus. — Oahu. — An unbranched shrub, 5 or 6 feet high. Leaves a foot long, about 4 inches wide, tapering gradually at the base into a petiole but an inch long. The pubescence on the under surface of the leaf whitish, except on the brown veins, and quite characteristic. Peduncles loosely several-flowered. Ovary 6 or 7 lines long. Sepals hardly exceeding a line in length. (M. & B.)

267. Delissea calycina (Presl. Prodr. Lob. p. 47): foliis oblongo-lanceolatis utrinque acutis in petiolum brevem longe attenuatis inæqualiter eroso-crenulatis supra planis pilisque conicis brevibus raris sparsis conspersis subtus reticulato-venosis in rete fuscescente præsertim hirtis; calyce glabro, lobis oblongis obtusiusculis uninerviis; ovario sub anthesi obconico, grossificatione olivæformi, vertice lobis calycis erectis coronato; corolla limbo hirtella; tubo antherarum circa basin sursumque in sulcis hirto. *Lobelia calycina*, Cham. in Linnæa, 8, p. 222. — Leaves crenulate, shining above, 1½ feet long, 3 inches wide. Petiole 1 inch long. In some notes which Prof. A. Braun has obligingly communicated concerning Chamisso's specimen of this plant in the Berlin herbarium, he shows that the common peduncle is but an inch or two long, much thickened, and that the sepals are ovate-lanceolate, 3 lines long and half as wide. It thus differs in several respects from the preceding species, which I had at first thought should be referred here, but I am not so sure now that this species should not stand in *Cyanea*, and near *C. aspera*, Gray.

268. Delissea pinnatifida (Presl. l. c. p. 47): ramosa; foliis oblongo-lanceolatis utrinque acutis in petiolum brevem decurrentibus remote pinnatifidis leviter sinuato-duplicato-dentatis, dentibus brevibus pinnisque obtusis calloso-mucronulatis, supra planis glabris, subtus reticulato-venosis in rete fuscescente præsertim hirtis; racemis axillaribus; calycibus corollisque hirtis; ovario obconico lobis calycis auriculatis ovatis obtusis coronato. *Lobelia pinnatifida*, Cham. in Linnæa, 8, p. 220. — Oahu.

269. DELISSEA AMBIGUA (Presl. l. c. p. 47): foliis oblongo-lanceolatis utrinque acutis in petiolum brevem longe angustatis sinuato-duplicato-triplicatoque-dentatis (dentibus calloso-mucronulatis) supra planis glabris subtus hirtis reticulato-venosis rete fuscescente; racemis axillaribus; ovario obconico glabrescente; lobis calycis ovatis subemarginato-obtusis mucronatis paululum hirtellis; corolla in nervis præsertim hirta. *Presl.* — According to Chamisso, perhaps not distinct from the preceding, but the calyx-lobes less auricled, etc. *Lobelia ambigua*, Cham. l. c. p. 221. — I know nothing of this or the preceding species. Perhaps they should stand in *Cyanea.*

270. DELISSEA MANNII (W. T. Brigham, in litt.): fruticosa, ramosa, puberula; foliis lanceolatis acutis serratis subtus pallidioribus; pedunculis petiolo subæquilongis pollicaribus; calycis lobis linearibus ovario bis longioribus; corolla fere recta; seminum testa minutissime striato-reticulata. — Molokai. — Leaves 5 or 6 inches long, 1 to 1½ inches wide. Calyx lobes 3 or 4 lines long, less than a line wide. (W. T. Brigham.)

271. DELISSEA FISSA (sp. nov.): fruticosa, ramosa; foliis sesquipedalibus in petiolum longe attenuatis obovato-lanceolatis utrinque præsertim basi acuminatis crenatis supra glaberrimis subtus parce hirsutulis; racemis brevibus 8–12-floris; pedunculis pedicellisque bracteolatis cum floribus (sesquipollicaribus) glanduloso-villosis; lobis calycis lanceolatis ovario longioribus; corolla purpurea dorso usque ad basim fissa; columna staminea glaberrima. — Valleys of Kealia and Hanalei, Kauai. — A branching shrub about 10 or 12 feet high. (M. & B. 577.)

272. DELISSEA PILOSA: "caule frutescente; foliis subpedalibus membranaceis obovatis utrinque acutis vel acuminatis eroso-crenatis pilis brevibus mollibus hirsutis; racemis brevibus in pedunculo 1–2-pollicari hirsutissimo paucifloris; floribus parvis griseo-cæruleis pedicellisque glabris; lobis calycis linearibus [subfoliaceis] ovario oblongo æquilongis." — *Cyanea pilosa*, Gray, l. c. p. 149. — Mauna Kea, Hawaii.

273. DELISSEA ASPLENIFOLIA (sp. nov.): fruticosa, fere glabra; foliis membranaceis amplis (ultrapedalibus) pinnatisectis; segmentis lanceolatis sinuato-subpinnatifidis ala sinuata confluentibus; costa rhachi petiolisque plurifloris aculeis brevibus armatis; pedicellis bracteolatis; lobis calycis oblongis obtusiusculis ovario dimidio brevioribus; corolla gracili fere bipollicari. — Waiehu Valley, West Maui. — A

small simple-stemmed shrub 3 to 5 feet high. Leaves much like those of *Cyanea Grimesiana.* (M. & B. 464.)

CYANEA, *Gaud. Bot. Freyc. Voy. p.* 457.

Calyx profunde 5-fidus, tubo turbinato, lobis æqualibus foliaceis persistentibus. Corolla tubulosa, subarcuata, 5-fida, dorso ad medium vel basim usque fissa, lobis sub-bilabiatis æquilongis lineari-lanceolatis. Columna staminea a corolla libera. Antheræ duæ inferiores vel omnes barbatæ. Stigma bilobum. Bacca bilocularis. — Frutices vel arbores lactescentes, Sandwicenses, sæpius tuberculato-aculeatæ, foliis integris vel pinnatipartitis, racemis axillaribus.

274. CYANEA ASPERA (Gray, l. c. p. 148): "foliis oblongo-ovatis acuminatis denticulatis subtus ad venas venulasque ochraceo-hirtellis utrinque setulis basi papillatis asperis, petiolo muricato; calycis glabri lobis ovalibus obtusissimis foliaceis tubum elongato-obconicum æquantibus; corolla 2½-pollicari curvata." — Oahu. (Expl. Exp.)

275. CYANEA ARBORESCENS (sp. nov.): ramosa, glabra; foliis coriaceis obtusis basi angustatis crebre repando-serrulatis supra viridissimis subtus pallidioribus; pedunculis axillaribus paucifloris; bacca flava diametro sesquipollicari; lobis calycis succulentis pollicaribus vel sesquipollicaribus oblongis obtusis. — West Maui. — A small tree 20 or 25 feet high, much branched. Leaves 3 to 6 inches long, 1 to 1½ inches wide. Fully expanded flowers not seen, but the young bud an inch long. (M. & B.; Hillebrand?)

276. CYANEA LOBATA (sp. nov.): fruticosa, glabra; foliis sesquipedalibus oblanceolatis obtusis inæqualiter sinuato-lobatis subtus pilis brevibus rarissimis (petiolo 3 – 4-pollicari aculeis conicis sparsis) obsitis; pedunculis bracteatis paucifloris petiolo subæquilongis, bracteis linearibus subfoliaceis; sepalis foliaceis late oblongis obtusis mucronatis plurinerviis pollicaribus ovario multo longioribus; corolla magis curvata 2 – 3-pollicari; stigmate valde bilobo nudo. — West Maui. — A small shrub. (M. & B. 467.)

277. CYANEA GRIMESIANA (Gaud. Bot. Freyc. Voy. p. 4, t. 75): fruticosa, glabra; foliis cum petiolo 6-pollicari bi – tripedalibus pinnatisectis, segmentis lanceolatis sinuatis; petiolis aculeis conicis armatis; pedunculis longis laxe paucifloris pluribracteatis, bracteis lanceolatis foliaceis; pedicellis bipollicaribus bracteolatis; lobis calycis oblongis acuminatis foliaceis plurinerviis ultrapollicaribus ovario longioribus; corolla curvata 2 – 3-pollicari; stigmate bilobo pilis cincto; bacca longe turbinata. — Oahu. (M. & B. 201.)

Var.? CITRULLIFOLIA (Gray, l. c. p. 148): "foliis bipinnatipartitis, segmentis sinuatis; caule aculeis conicis creberrimis horrido." — Hawaii. Oahu.

278. CYANEA LEPTOSTEGIA (Gray, l. c. p. 149): "glabra; foliis ad apicem caulis simplicis arborei confertis lanceolatis subsessilibus integerrimis undulatis (bipedalibus et ultra); racemis brevissimis confertifloris; calycis segmentis prælongis e basi latiori angustissime linearibus patentibus corolla gracili longioribus persistentibus." — Mountains above Waimea, Kauai. — A very remarkable-looking plant, the erect columnar trunk 30 or 40 feet high, bearing at its apex a dense spreading tuft of leaves. Flowers dark purple. (M. & B. 575.)

279. CYANEA TRITOMANTHA (Gray, l. c. p. 149): "caule simplici arborescente orgyali; foliis lato-lanceolatis membranaceis subintegerrimis fere glabri basi acutis tripedalibus (incl. petiolo crasso 5 – 8-pollicari); floribus confertis magnis; calyce pubescente, lobis linearibus pollicaribus foliaceis ovario cylindraceo longioribus; corolla tripollicari extus tomentoso-pubescente in segmenta 3 longo-linearia mox divisa." — Mouna Kea, Hawaii. (Expl. Exp.)

280. CYANEA SUPERBA (Gray, l. c. p. 149): caule arborea simplicissima; foliis ad apicem caulis confertis lanceolatis eroso-crenulatis subcoriaceis bi – tripedalibus petiolatis; inflorescentia corollisque tomentosis; pedunculis elongatis nutantibus crebre bracteatis capitulo compacto globoso terminatis; lobis calycis oblongis foliaceis (margine imbricatis?); corolla bipollicari tubulosa unilabiata, laciniis linearibus patentibus. — *Macrochilus superbus*, Presl. Prodr. Lob. p. 47. *Lobelia superba*, Cham. in Linnæa, 8, p. 223, 225. — Seen growing on the Kaala Mountains, Oahu, but unfortunately not in flower.

CLERMONTIA, *Gaud. Bot. Freyc. Voy. p.* 459.

Calyx coloratus, supra ovarium productus, arcuatus, corollam æquilongam sub anthesi valvatim includens, ab ovario circumcisse caducus. Corolla tubulosa, arcuata, semi-quinquefida dorso ad basim usque fissa, lobis subæqualibus. Columna staminea a corolla libera. Antheræ 2 inferiores barbatæ. Stigma bilobum. Bacca subglobosa, bilocularis. — Arbusculæ lactescentes, Sandwicenses, foliis integris, racemis axillaribus, pedicellis bibracteolatis.

281. CLERMONTIA GRANDIFLORA, Gaud. Bot. Freyc. Voy. p. 459, t. 73; Gray, l. c. p. 150. Var. BREVIFOLIA, Gray, l. c. Var. OBLONGIFOLIA, Gray, l. c. *C. persicæfolia* et *C. oblongifolia*, Gaud.

l. c. t. 71, 72. Var. LONGIFOLIA, Gray, l. c. *C. grandiflora*, Hook. & Arn. Bot. Beech. Voy. p. 88. *C. Kakeana*, Meyen, in Presl, Lob. *C. macrophylla*, Nutt. *C. macrocarpa*, Gaud. Bot. Voy. Bonite, t. 49. Though variable in the leaves, and in a lesser degree in the flowers, this is a well-marked species, at once recognized wherever seen in the mountain forests which it inhabits, and of which it at times almost forms a part, as it is a large, much-branched shrub or small tree, 10 to 30 feet high. (M. & B. 232.)

282. CLERMONTIA PARVIFLORA, Gaud.; Gray, l. c. p. 150. *C. oblongifolia*, Hook. & Arn. l. c., non Gaud. A small branching shrub. (M. & B. 296.)

BRIGHAMIA, *Gray, nov. gen.*

"Calyx tubo oblongo eximie 10-costato, dentibus parvulis. Corolla hypocraterimorpha; tubo prælongo fere recto antice sinubus 2 profundius fisso; lobis ovato-oblongis æqualiter patentibus consimilibus, nisi 2 anticis longiter unguiculatis. Columna staminea corollæ tubo infra medium (postice altius) adnata; synanthera subinclusa apice recurvo barbata. Ovarium biloculare. Stigma bilobum, nudum. Capsula primum carnosa, loculis demum rimis 2 longitudinaliter dehiscentibus. Semina oblonga; testa tenuiter crustacea læviuscula: embryo rectus albumine oleoso brevior.—Arbuscula Sandwicensis, carnosa, glabra; caule orgyali simplicissimo folia obovata subintegerrima creberrime quasi capitatim conferta gerente; pedunculis axillaribus folio brevioribus apice racemoso-paucifloris; floribus pedicello recto haud resupinatis albis.

283. "BRIGHAMIA INSIGINIS.—Molokai. (W. T. Brigham.) 'Kauai or Niihau.' (Remy, 309^{ter}.) — Stem 5 to 18 feet high. Leaves (in the specimens) only 6 or 8 inches long, contracted at the base into a very short petiole, evidently more or less fleshy, and forming a close tuft at the summit of the columnar stem. Peduncles stout and manifestly fleshy, 3 to 5 inches long; the thick ascending pedicels half an inch or an inch long: bracts deciduous. Calyx-teeth much shorter than the tube, oblong-linear, slightly accrescent and persistent on the ripe fruit collected by Mr. Brigham, deciduous from that of Remy's specimen. Corolla showy, white with a tinge of cream-color; the rather slender tube about 4 inches long, slightly incurved; the 5 lobes when expanded about an inch long, thickish, valvate in æstivation, with the pointed tips inflexed, in equality of size and position apparently as nearly regular as in *Isotoma*, but the two anterior lobes separated from

each other and from the lateral ones by sinuses, forming narrow claws of nearly the same length as the lobe. The anther-tube half an inch long, scarcely projecting beyond the cleft of the corolla, straight, with the apex abruptly curved toward the upper side of the flower, and tipped with a uniform tuft of beard, otherwise glabrous. Stigma neither bearded nor indusiate, of two small and flat rounded lobes. Ovary acutely and nearly equably 10-ribbed. Fruit three fourths of an inch long, fleshy-coriaceous, 10-ribbed, evidently capsular; each cell opening by two equidistant, longitudinal, intercostal chinks or clefts extending from just below the apex to the base. Seeds very numerous, half a line long. — Described from a specimen in Remy's collection, communicated by the Paris Museum, and from flowers and fruits collected by Mr. Brigham, and preserved in alcohol. — This very interesting addition to the peculiar Lobeliaceæ of the Sandwich Islands, I have dedicated to Mr. Mann's companion in Hawaiian exploration, WILLIAM T. BRIGHAM, Esq., who not only, after M. Remy, discovered it, and brought the materials needful to complete its characters, but who has paid particular attention to this group of plants, collecting specimens, and especially making sketches of the arborescent species he met with. The fruit of my specimen from Remy would rather be thought to be baccate; but Mr. Brigham's prove it to be capsular. The resemblance of our plant to *Isotoma* is mainly in the great length and general form of the corolla. But its true relationship is evidently with the unfortunately little-known *Sclerotheca arborea*, A. DC. (*Lobelia arborea*, Forst.) of Tahiti. In that, however, so far as is made out, the corolla is no longer than the foliaceous calyx-lobes, and cleft to the base, and the *capsule opens at the vertex by two round pores*. The one-flowered peduncle is of small moment, as it is bibracteate; and I suppose it is not certain that the flower is resupinate after the manner of the order, although so described by De Candolle. In the present plant there is no torsion of the pedicel, and the odd sepal is anterior. Unless future discoveries invalidate the characters, *Brighamia* and *Sclerotheca* must surely be regarded as distinct, related genera." *A. Gray, mss.*

284. LOBELIA MACROSTACHYS, Hook. & Arn. l. c. p. 88; Gaud. Bot. Voy. Bonite, t. 46; Gray, l. c. p. 150. A shrub with an upright simple stem, 4 to 8 feet high, dividing at the top into a crown of flowering branches, spreading like the arms of a chandelier. When the light pink flowers have expanded, it is an exceedingly showy plant. (M. & B. 463.)

285. Lobelia Gaudichaudii, A. DC. Prodr. 7, p. 384; Gaud. l. c. t. 45; Gray, l. c. Var. Kavaiensis, Gray, l. c. (M. & B. 462.)

286. Lobelia neriifolia, Gray, l. c. p. 150. (M. & B.)

Goodeniaceæ.

287. Scævola sericea, Forst. Prodr. n. 504; Gray, in Proceed. Am. Acad. p. 151. *S. plumerioides*, Nutt. in Trans. Am. Phil. Soc. n. ser. 8, p. 252. (M. & B. 248; Remy, 315.)

288. Scævola coriacea, Nutt. l. c. p. 253; Gray, l. c. p. 151. In the three forms or varieties designated. (M. & B. 388; Remy, 313, 315^{bis}.)

289. Scævola Gaudichaudii, Hook. & Arn. Bot. Beech. Voy. p. 89; DC. Prodr. 7, p. 507; Gray, l. c. p. 151, non *S. Gaudichaudiana*, Cham. *S. montana*, Gaud. in Bot. Freyc. Voy. p. 460, non Labill. *S. Menziesiana*, var. *glabra*, Cham. in Linnæa, 8, p. 227? *Temminckia Gaudichaudii*, De Vriese, Gooden. p. 11. (M. & B. 385; Remy, 314.)

290. Scævola Chamissoniana, Gaud. l. c. p. 461, t. 82; Hook. & Arn. l. c. p. 89; Gray, l. c. p. 152. *S.* (*Chamissoniana*, Gaud.?) *Gaudichaudiana*, Cham. in Linnæa, 8, p. 226. *S. Menziesiana*, Cham. l. c. p. 227, excl. var. *S. ciliata*, G. Don. Syst. 3, p. 128; DC. Prodr. 7, p. 506. *S. ligustrifolia*, Nutt. in Trans. Am. Phil. Soc. l. c. *S. pubescens*, Nutt. l. c. (M. & B. 9; Remy, 310, 311.)

291. Scævola mollis, Hook. & Arn. l. c.; DC. l. c.; Gray, l. c. p. 152. *Temminckia mollis*, De Vriese, Gooden. p. 12, t. 2. (M. & B. 127; Remy, 312.)

292. Scævola glabra, Hook. & Arn. l. c.; DC. l. c.; Gaud. Voy. Bonite, t. 48; Gray, l. c. p. 152. *Camphusia glabra*, De Vriese, l. c. p. 15, t. 1. (M. & B. 122.)

Ericaceæ.

293. Vaccinium reticulatum, Smith, in Rees, Cycl.; Gray, in Proceed. Am. Acad. 5, p. 323. *V. cernuum*, Cham. & Schlecht. in Linnæa, 1, p. 527; Hook. Ic. Pl. t. 87. Var. dentatum, Gray, l. c. *V. dentatum*, Smith, l. c. Var. calycinum, Gray, l. c. *V. calycinum*, Smith, l. c. Var.? lanceolatum, Gray, l. c. (M. & B. 303.)

294. Vaccinium penduliflorum, Gaud. Bot. Freyc. Voy. p. 454, t. 68; Gray, l. c. p. 323. (M. & B. 102.) Var. berberifolium, Gray, l. c. (M. & B. 430.)

Epacrideæ.

295. CYATHODES TAMEIAMEIÆ, Cham. in Linnæa, 1, p. 539; Gray, in Proceed. Am. Acad. 5, p. 325. Var. CHAMISSOI, Gray, l. c. *C. Tameiameiæ*, Cham.; Hook. & Arn. Bot. Beech. Voy. p. 89. Var. BROWNII, Gray, l. c. *C. Banksii*, (Gaud. Bot. Freyc. Voy. p. 98 ?) & *Macræana*, DC. Prodr. 7, p. 742. (M. & B. 123; Remy, 488.)

296. CYATHODES IMBRICATA, Stschelglew, in Mosc. Bull. 32, p. 10; 1859. *C. Douglasii*, Gray, l. c. p. 325. Var. STRUTHIOLOIDES, Gray, l. c.

Ebenaceæ.

297. MABA SANDWICENSIS, A. DC. Prodr. 8, p. 242; Gray, in Proceed. Am. Acad. 5, p. 327. (M. & B. 124; Remy, 470, 518.)

298. MABA HILLEBRANDII, Seem. Fl. Vitiensis, p. 151. (Hillebrand, 274 in Herb. Kew. ex Seemann, l. c.)

Sapotaceæ.

299. SAPOTA SANDWICENSIS, Gray, in Proceed. Am. Acad. 5, p. 328. (M. & B. 363; Remy, 475, 476, 478.)

Myrsinaceæ.

300. MYRSINE GAUDICHAUDII, A. DC. in Ann. Sc. Nat. sér. 2, 16, p. 85, & Prodr. I much doubt if this is distinct from the next, but have no specimens, authentic or otherwise.

301. MYRSINE LESSERTIANA, A. DC. l. c. p. 85. (M. & B. 614, foliis angustioribus, 207; Remy, 467.)

302. MYRSINE SANDWICENSIS, A. DC. l. c. p. 85. (M. & B. 525; Remy, 468.)

Primulaceæ.

303. LYSIMACHIA HILLEBRANDI, Hook. f. Gray, in Proceed. Am. Acad. 5, p. 328. Var. *α*. (M. & B. 229.) Var. *β*. DAPHNOIDES, Gray, l. c. Var. *γ*. ANGUSTIFOLIA, Gray, l. c. (Remy, 458.)

304. LYSIMACHIA LINEARILOBA, Hook. & Arn. Bot. Voy. p. 268; Gray, l. c. p. 329. (Remy, 459, 460, vars.)

Plantaginaceæ.

305. PLANTAGO PRINCEPS, Cham. & Schlecht. in Linnæa, 1, p. 167; Gray, in Proceed. Am. Acad. 6, p. 54; DC. Prodr. 13, p. 704. *P. Queleneana*, Gaud. in Bot. Freyc. Voy. p. 445, t. 50; Cham. & Schlecht. l. c. p. 186; Hook. & Arn. Bot. Beech. Voy. p. 93; DC. l.

c. p. 700. (M. & B. 85; Remy, 427.) Var. β. LAXIFOLIA, Gray, l. c. Var. γ. HIRTELLA, Gray, l. c. (M. & B. 613.) Var. δ. LONGIBRACTEATA; bracteis ovato-subulatis floribus inferioribus 2–3-plo longioribus: cæt. β.— On wet rocks in Waioli valley, Kauai. (M. & B. 612.)

306. PLANTAGO PACHYPHYLLA, Gray, l. c. p. 54. Var. α. MAVIENSIS, Gray, l. c. (M. & B. 428.) Var. β. HAWAIENSIS. Gray, l. c. (Remy, 429.) Var. γ. KAVAIENSIS, Gray, l. c. (M. & B. 439.)

306ª.† PLANTAGO MAJOR, Linn. (M. & B.)

Plumbaginaceæ.

307. PLUMBAGO ZEYLANICA, Linn. (M. & B. 226; Remy, 227.) The natives use the acrid juice of this, as of *Sisyrinchium acre*, for tattooing.

Gesneriaceæ.

308. CYRTANDRA CORDIFOLIA, Gaud. Bot. Freyc. Voy. p. 446, t. 56; Gray, in Proceed. Amer. Acad. 5, p. 350; Hook. & Arn. Bot. Beech. Voy. p. 91. (M. & B. 63.)

309. CYRTANDRA PLATYPHYLLA, Gray, l. c. p. 350.

310. CYRTANDRA PICKERINGII, Gray, l. c. p. 350.

311. CYRTANDRA TRIFLORA, Gaud. l. c. t. 52; Hook. & Arn. l. c. p. 91; Gray, l. c. p. 351. Var. GAUDICHAUDII, ARGUTA, & LYSIOSEPALA, Gray, l. c.

312. CYRTANDRA GRANDIFLORA, Gaud. l. c. t. 55; Hook. & Arn. l. c. p. 91; Gray, l. c. p. 351. The peduncle is one- or sometimes two-flowered; the flowers subtended by two large and foliaceous, somewhat connivent bracts, which are more or less distinctly 3-nerved from the base, and slightly reticulate-veiny, the nerves and veins with a rusty pubescence like that of the leaves. The bracts at once distinctly characterize the species.

313. CYRTANDRA ŒNOBARBA (sp. nov.): humilis, decumbens, subcarnosa; caule petiolisque crassis pilis rigidulis atro-rufis reflexis creberrime barbatis; foliis ovatis vel subcordatis vix acutis denticulatis ad venas præsertim rufo-hirsutis supra glabrescentibus; pedunculis 1–2-floris petiolum subæquantibus; calyce oblongo 5-fido barbato, lobis ovato-lanceolatis acuminatis foliaceis corolla pollicari glaberrima cum limbo amplo explanato paullo brevioribus.— Wahiawa falls, and in Waioli Valley, Kauai.— Stems low and spreading, only one or two feet high, somewhat succulent. Leaves thickish, 2½ to 3½ inches long, on very stout petioles (half an inch to 2 inches long) which, like the

stem, are very densely bearded with stiff and reflexed, many-jointed, brownish-red hairs: these are much longer, denser, and more persistent than those of the rest of the plant. The ample foliaceous bracts, characteristic of the related *C. grandiflora*, are here wanting. Corolla fully an inch long, white, the throat ampliate, and the lobes widely spreading. — It is to be regretted that the specimens secured of this remarkable species are scanty and imperfect. (M. & B. 616 pro parte.)

314. CYRTANDRA LESSONIANA, Gaud. l. c. t. 54; Hook. & Arn. l. c. p. 91; Gray, l. c. p. 351. *C. Hillebrandi*, Oliver, in herb. Gray, is apparently a form of this species with broadly ovate calyx-lobes, which are separated nearly or quite to the base. There is also another form, if it be not a distinct species, with very narrow, almost linear calyx-lobes, which are more or less united, in some cases forming a tubular calyx which is split down on one side, or with a single free lobe; the corolla is arcuate with a broad lip, and the leaves prominently reticulate-veiny beneath. (M. & B. 617, 77 pro parte.)

315. CYRTANDRA PALUDOSA, Gaud. l. c.; Hook. & Arn. l. c.; Gray, l. c. Described as glabrous, but showing a soft fulvous pubescence on the young shoots in the more common form of the species, which becomes quite pronounced on the petioles and large veins of the leaves as well, and with something of the character of that of *C. cænobarba*, on a form (probably referable here) from the foot of Wahiawa falls, Kauai, where it is constantly kept moist by the spray.

316. CYRTANDRA GARNOTTIANA, Gaud. l. c. t. 53; Hook. & Arn. l. c.; Gray, l. c. (M. & B. 116, 126, 77 pro parte.)

317. CYRTANDRA LAXIFLORA (sp. nov.): foliis ovali- seu ovato-oblongis acuminatis argute serratis membranaceis basi plerumque obtusis supra hirsutulis subtus molliter pubescentibus; pedunculis petiolum gracilem adæquantibus laxe cymoso-multifloris; pedicellis filiformibus hirsutis; calyce 5-partito, lobis linearibus corolla cylindrica hirsuta (fere semipollicari) dimidio brevioribus; fructu glabro ovato-globoso. — Waialua Mountains, Oahu. — A well-marked species, resembling *C. Macræi* in foliage and inflorescence; but the leaves are narrower, the larger ones 6 or 7 inches in length by 3 or 4 in breadth; the peduncles are much longer, as also the pedicels, the latter nearly half an inch long, and hirsutely pubescent; the flowers are nearly twice as large and pubescent; the calyx lobes linear and obtuse. Ovary almost glabrous. Immature fruit half an inch long, ovate, inclining to globose. (M. & B. 615.)

318. CYRTANDRA MACRÆI, Gray, l. c. (W. T. Brigham.)

319. CYRTANDRA MENZIESII, Hook. & Arn. l. c. p. 91, adn.; Gray, l. c. The leaves are apparently always in fours, and obovate-oblanceolate or oblong, with a long tapering or cuneate entire base. (M. & B. 310.)

Solanaceæ.

320. SOLANUM NELSONI, Dunal, in DC. Prodr. 13, p. 123?; Gray, in Proceed. Am. Acad. 6, p. 42. (Remy, 442.) Var. THOMASIÆFOLIUM, Seemann, in Journ. Bot. 1, p. 209.

321. SOLANUM PUBERULUM, Nutt. mss. in Herb. Mus. Brit., fide Seemann, l. c. — I do not identify this.

322. SOLANUM SANDWICENSE, Hook. and Arn. Bot. Beech. Voy. p. 92; Gray, l. c. *S. Sandwicense* & *Woahense*, Dunal, in DC. l. c. (M. & B. 202.) Var? KAVAIENSE, Gray, l. c.

323. SOLANUM INCOMPLETUM, Dunal, in DC. l. c.; Gray l. c. (M. & B. 457, 458; Remy, 451.)

324. SOLANUM OLERACEUM, Dunal, in DC. l. c. p. 50.

325.† SOLANUM ACULEATISSIMUM, Jacq. Coll. 1, p. 100, & Ic. Rar. 1, t. 41. *S. xanthocarpum*, Seemann, l. c. p. 206, non Schrad. & Wendl. Sert. Hanov. 1, p. 8, t. 2. (Seem. n. 1721 in Hb. Gray.)

326. LYCIUM SANDWICENSE, Gray, l. c. (M. & B. 596, 597.)

327. NOTHOCESTRUM LATIFOLIUM, Gray, l. c. (M. & B. 413.)

328. NOTHOCESTRUM LONGIFOLIUM, Gray, l. c. (M. & B. 414.)

329. NOTHOCESTRUM BREVIFLORUM, Gray, l. c. p. 49.

330. NOTHOCESTRUM SUBCORDATUM, (sp. nov.): arboreum, fere glabrum; foliis ovatis ellipticisve subcordatis; pedunculis solitariis; corolla 4–5-partita extus dense sericea tubo calycis campanulato inæqualiter quadridentato quadrangulato fere duplo longiore; staminibus 4–5; bacca globosa. — In ravines of the Kaala Mountains, Oahu. — A tree 20 or 30 feet high. Leaves 2 to 5 inches long, 1½ to 4 inches wide, subcordate or rounded at the base, more or less obtuse at the apex. Calyx 4 to 5 lines long. Corolla yellow, as in *N. longifolium* and *latifolium*. (M. & B. 620.)

331.* PHYSALIS PERUVIANA, Linn. Spec. 2, p. 1670. (M. & B. 29.)

Scrophulariaceæ.

332. HERPESTIS MONNIERA, HBK. (M. & B. 53.)

333.† SCOPARIA DULCIS, Linn. (Seemann, Fl. Vitiensis.)

Labiateæ.

334. PLECTRANTHUS PARVIFLORUS, Willd. Hort. Berol. 1, t. 65, non R. Br. *Pl. australis*, Hook. & Arn. Bot. Beech. Voy. p. 92, non R. Br.? This is, however, probably nothing more than the true *Pl. australis*, R. Br. Prodr. Fl. N. Holl. p. 506, and if so, will bear the prior name. (M. & B. 41, 84, 293; Remy, 403.)

335. SPHACELE HASTATA, Gray, in Proceed. Am. Acad. 5, p. 341. (M. & B. 401.)

336. PHYLLOSTEGIA VESTITA, Benth. in Bot. Reg. sub 1292, & in DC. Prodr. 12, p. 553; Gray, l. c. p. 342. *P. dentata*, Benth. l. c.

337. PHYLLOSTEGIA GRANDIFLORA, Benth. l. c.; Gray, l. c. p. 342. *Prasium macrophyllum*, Gaud. Bot. Freyc. Voy. p. 453, t. 65, fig. 3, non Benth. l. c. (M. & B. 6; Remy, 383.)

338. PHYLLOSTEGIA BREVIDENS, Gray, l. c. p. 343. Var.? AMBIGUA, Gray, l. c. p. 343.

339. PHYLLOSTEGIA GLABRA, Benth. in Linnæa, 6, p. 79, & in Bot. Reg. l. c.; Gray, l. c. p. 343; Hook. & Arn. Bot. Beech. Voy. p. 92. *Prasium glabrum*, Gaud. Bot. Freyc. Voy. p. 452, t. 64. *Phyllostegia Chamissonis*, Benth. in Linnæa, l. c.; Hook. & Arn. l. c.; DC. Prodr. l. c. *P. Macræi*, Benth. in DC. Prodr. l. c. (M. & B. 224, 354; Remy, 385.)

340. PHYLLOSTEGIA? HIRSUTA, Benth. in Bot. Reg. & in DC. Prodr. l. c. p. 555; Gray, l. c. p. 344.

341. PHYLLOSTEGIA PARVIFLORA, Benth. in Linnæa, 6, p. 79, & in DC. Prodr. l. c. p. 554; Gray, l. c. p. 344. (M. & B. 553, 554, 405, 404.) Var. GAUDICHAUDII, Gray, l. c. Var. GLABRIUSCULA, Gray, l. c. *P. macrophylla*, Benth. in Bot. Reg. & in DC. Prodr. l. c. p. 554. Var. MOLLIS, Gray, l. c. *P. mollis*, Benth. in Linnæa, 6, p. 79, & in DC. l. c. p. 554.

342. PHYLLOSTEGIA STACHYOIDES, Gray, l. c. p. 344.

343. PHYLLOSTEGIA CLAVATA, Benth. in Bot. Reg. & in DC. Prodr. l. c. p. 554; Gray, l. c. p. 344. (M. & B. 415; Remy, 386.)

344. PHYLLOSTEGIA RACEMOSA, Benth. in Bot. Reg. & in DC. l. c.; Gray, l. c. p. 344. (M. & B. 555?)

345. PHYLLOSTEGIA HAPLOSTACHYA, Gray, l. c. p. 345. (Remy, 394.) Var. LEPTOSTACHYA, Gray, l. c.

346. PHYLLOSTEGIA TRUNCATA, Gray, l. c. p. 345. (Remy, 395.)

347. PHYLLOSTEGIA FLORIBUNDA, Benth. Lab. p. 653, & in DC. l. c. p. 555; Gray, l. c. p. 345.

348. STENOGYNE MACRANTHA, Benth. in Bot. Reg. l. c. & in DC. Prodr. 12, p. 555. (M. & B. 402.) Var. GRAYI: labio inferiore breviore. *S. macrantha*, Gray, in Proceed. Am. Acad. 5, p. 346. (Remy, 381.)

349. STENOGYNE ROTUNDIFOLIA, Gray, l. c. p. 347. (M. & B. 403.)

350. STENOGYNE CORDATA, Benth. Lab. p. 654, & in DC. l. c.; Gray, l. c. p. 347.

351. STENOGYNE SESSILIS, Benth. Lab. p. 654, & in DC. l. c.; Gray, l. c. Var. β: foliis lævibus; pedicellis calyce (fructifero) æquilongis. (M. & B. 406.)

352. STENOGYNE CALAMINTHOIDES, Gray, l. c. (Remy, 380.)

353. STENOGYNE SCROPHULARIOIDES, Benth. in Bot. Reg. sub t. 1292, & in DC. l. c. p. 556; Gray, l. c. p. 347. Var. β. Gray, l. c. *S. Nelsoni*, Benth. Lab. p. 655. *Phæopsis montana*, Nutt. in herb. Hook. (Remy, 376.) Var. γ: undique hirsuta; foliis grosse dentatis. (Hillebrand, 339.)

354. STENOGYNE PURPUREA (sp. nov.): parce hirsuta, divaricato-ramosa; foliis ovato-lanceolatis acuminatis serratis basi rotundatis vix truncatis petiolatis supra glabratis; verticillastris 6-floris; pedicellis calyce subæquilongis; dentibus calycis æqualibus acutis; corolla undique hirsuta, labio superiore longiore. — Mountains above Waimea, Kauai. — Leaves 3 to 4 inches long, 12 to 20 lines wide, long-acuminated. Calyx 4 or 5 lines long, scarcely half as long as the corolla. Most nearly allied to *S. scrophularioides*. (M. & B. 552.)

355. STENOGYNE RUGOSA, Benth. in Bot. Reg. l. c. & in DC. l. c. p. 556; Gray, l. c. (M. & B. 295; Remy, 382.)

356. STENOGYNE ANGUSTIFOLIA, Gray, l. c. p. 348. (Remy, 393.)

357. STENOGYNE PARVIFLORA (sp. nov.): molliter villoso-pubescens, ramosissima; foliis deltoideis grosse crenatis basi truncatis vel subcordatis (4–6 lin. latis) petiolatis; verticillastris 6–7-floris, pedicellis calyce subæquilongis; calycis (fructiferi ampliati) lobis subinæqualibus latis obtusis tubo multo brevioribus; corolla extus pubescente labio inferiore quam superius longiore calyce plus duplo longiore; staminibus haud exsertis. — On the northwest side of Haleakala, East Maui, at 6000 or 7000 feet elevation. — By its several-flowered whorls, and by the lower lip being longer than the upper, this is most nearly related to the large-leaved group, but resembles *S. diffusa* in its

manner of growth, its small leaves, and general aspect. Spreading, much branched, suffruticose at the base. Leaves 7 – 10 lines long, 4 – 6 lines wide, the crenatures often a line and a half deep; petioles 3 – 4 lines long. Calyx about two lines long, on a pedicel little shorter than itself. Flower 3 or 4 lines long, the lower lip large in proportion, nearly 2 lines long. The sterile specimen referred to by Gray, l. c. p. 348, is from the same locality and belongs here. (M. & B. 407.)

358. STENOGYNE MICROPHYLLA, Benth. Lab. p. 655, & in DC. c. l. p. 556; Gray, l. c. p. 348. (M. & B. 294; Remy, 397.)

359. STENOGYNE CRENATA, Gray, l. c. p. 348. (M. & B. 408.)

360. STENOGYNE DIFFUSA, Gray, l. c. p. 348.

Verbenaceæ.

361.† PRIVA ASPERA, HBK., 2, p. 278; DC. Prodr. 11, p. 534. (M. & B. 74.)

362. VITEX TRIFOLIA, Linn., var.? UNIFOLIOLATA. (M. & B. 409.)

363.† VERBENA BONARIENSIS, Linn., has been introduced and become a very troublesome weed.

363^a.† STACHYTARPHA DICHOTOMA, Vahl. Enum., 1, p. 207. (Remy, 405.)

Myoporineæ.

364. MYOPORUM (POLYCŒLIUM) SANDWICENSE, Gray, in Proceed. Am. Acad. 6, p. 52. *M. tenuifolium*, Hook. & Arn. Bot. Beech. Voy. p. 93, vix Forst. & R. Br. *Polycœlium Sandwicense*, A. DC. Prodr. 11, p. 706. (M. & B. 387; Remy, 462, 463, the normal form.) The normal form of this species is that of a tree 20 to 40 feet high, which is usually found growing on the outskirts of forests at medium elevations, and in rather dry places. With that, it seems necessary to connect a form, in all details of structure apparently similar, but with the leaves much thickened and succulent, as also the petals in a less degree, and growing as a decumbent shrub on the sea-coast, where seeds have doubtless been carried by mountain torrents. (M. & B. 585; Remy, 461.) The wood of this species has very much the fragrance of sandal-wood and is known as *bastard sandal-wood.* It is exported to some extent as sandal-wood, but does not appear to retain its fragrance so well.

Borraginaceæ.

365. CORDIA SUBCORDATA, Lam. Ill. no. 1899; Cham. & Schlecht.

in Linnæa, 4, p. 474. *C. Sebestena*, Forst. Prodr. p. 18, n. 108, non Linn. (M. & B. 350; Remy, 408.)

366. HELIOTROPIUM ANOMALUM, Hook. & Arn. Bot. Beech. Voy. p. 66; Gray, in Proceed. Am. Acad. 5, p. 339; & var. ARGENTEUM, Gray, l. c. *Lithospermum incanum*, Forst. sp. 1, p. 158. *Pentacarya heliotropoides*, DC. Prodr. 9, p. 559. (M. & B. 587; Remy, 411.)

367. HELIOTROPIUM CURASSAVICUM, Linn.; Hook. & Arn. Bot. Beech. Voy. p. 91. (M. & B. 50; Remy, 409.)

368.† BOTHRIOSPERMUM TENELLUM, Fisch. & Mey. (M. & B. 41.)

Hydrophyllaceæ.

369. NAMA SANDWICENSIS, Gray, in Proceed. Am. Acad. 5, p. 338. (M. & B. 97; Remy, 425.)

Convolvulaceæ.

370. BATATAS ACETOSÆFOLIA, Choisy, Conv. Rar. (Remy, 416.)

371.* BATATAS EDULIS, Choisy, Conv. Or. p. 53.

372. BATATAS PENTAPHYLLA, Choisy, l. c. p. 54. (M. & B. 351.)

373. IPOMÆA (CALONYCTION) BONA-NOX, Linn. *Calonyction speciosum*, Choisy, Conv. Or. p. 59. (M. & B.)

374. IPOMÆA (PHARBITIS) INSULARIS, Steud. *Pharbitis insularis*, Chois. Conv. Or. p. 57, & in DC. Prodr. 9, p. 341. *Convolvulus purpureus*, Hook. & Arn. Bot. Beech. Voy. p. 90, non Linn. Remy's No. 414 has the leaves lobed, and more obtuse. (M. & B. 36, 120; Remy, 413, 414, 415.)

375. IPOMÆA PES-CAPRÆ, Sweet. *Convolvulus Pes-capræ*, Linn.; Hook. & Arn. l. c. p. 90. *Ipomæa maritima*, R. Br. Prodr. 486.

376. IPOMÆA TURPETHUM, R. Br. Prodr. 485. (M. & B. 42.)

377. IPOMÆA FORSTERI, Gray, Bot. S. Pacif. Expl. Exp. ined. *I. carnea*, Forst. Prodr. Fl. Ins. Aust. p. 15, non Jacq. *I. obscura*, Guillem. Zeph. Tait. p. 44, vix Rœm. & Schult. *I. sepiaria*, Seem. in Bonpl. 1861, p. 258, vix Kœnig. Var. HAWAIENSIS, Gray, l. c. (W. T. Brigham.)

378. IPOMÆA PALMATA, Forsk. Descr. p. 43. Choisy, in DC. Prodr. 9, p. 386. *Conv. Cairicus*, Linn. According to the description our plant belongs here, as it has silky-tomentose seeds. It otherwise agrees with *I. tuberculata*, Rœm. & Sch., which is said by Gray, l. c. to grow on the Islands, though perhaps by a mistaken determination, as he had no ripe fruit. (M. & B. 345, 227.)

379. JACQUEMONTIA SANDWICENSIS, Gray, in Proceed. Am. Acad. 5, p. 336. *Convolvulus ovalifolius*, Hook. & Arn. Bot. Beech. Voy. p. 90, non Vahl. *Ipomœa ovalifolia*, var. *pubescens* & var. *tomentosa*, Choisy, Conv. Or. p. 67, & in DC. Prodr. 9, p. 357. (M. & B. 619; Remy, 420.)

380. BONAMIA MENZIESII, Gray, l. c. p. 336. *Convolvulus ovalifolius* var.? Hook. & Arn. Bot. Beech. Voy. p. 90. (M. & B. 618; Remy, 421.)

381. CUSCUTA SANDWICHIANA, Choisy, Cuscut. p. 184, t. 5, f. 4; Engelm. Cuscut. in Trans. Acad. Sci. St. Louis, 1, p. 497.

Gentianaceæ.

382. ERYTHRÆA SABÆOIDES, Gray, in Proceed. Am. Acad. 6, p. 40. *Schenkia sabæoides*, Griseb. in Bonpl. 1, p. 226. (M. & B. 64; Remy, 375.)

Loganiaceæ.

383. LABORDEA FAGRÆOIDEA (Gaud.): foliis crasso-coriaceis oblongis seu lanceolato-oblongis acutis supra glabris subtus parce hirsutis breviter petiolatis; cyma sessili pauciflora; pedunculis bibracteatis; lobis calycis ovatis vel ovato-lanceolatis petalis (intus pubescentibus) lineari-lanceolatis flavidis crassis duplo triplove brevioribus; stigmate elongato-clavato pubescente; ovario bi-triloculari; capsulis breviter pedunculatis sublignosis bi-trivalvibus. — *L. fagræoidea*, Gaud. Bot. Freyc. Voy. p. 450, t. 60, non Gray, in Proceed. Am. Acad. 5, p. 323. *L. sessilis*, Gray, l. c. I cannot doubt that this is the original species, as figured and described by Gaudichaud. It differs from the next in the much broader lobes of the calyx and corolla, the fewer-flowered cyme, and the thicker, hirsute leaves. (M. & B. 434.)

384. LABORDEA PALLIDA (H. Mann.): glabra; foliis obovato-oblongis oblongisve basi in petiolum breviusculum attenuatis penninerviis subcoriaceis, subtus pallidis; cyma sessili pluriflora; calyce (nunc hirsutulo) amplo fere 5-secto, segmentis lanceolatis subfoliaceis nervosis corolla (lobis linearibus) fere dimidio brevioribus; stigmate elongato subclavato; ovario bi-triloculari. — *L. fagræoidea*, Gray, l. c. p. 323, non Gaud. (M. & B. 611.)

385. LABORDEA HIRTELLA (sp. nov.): foliis coriaceis obovatis oblanceolatisve subito acutis supra glabratis subtus pubescentibus breviter petiolatis; cyma laxe pauciflora cum calyce 5-secto pubescente; lobis calycis subulatis corollæ tubo (fauce ampliato) dimidio brevioribus; cap-

sulis sublignosis bivalvibus. — On the summit of Lanai. — Shrub 5 or 6 feet high, irregularly much branched. Leaves 1½ to 2½ inches long, 9 to 12 lines wide. Flowers on rather long peduncles and pedicels; as in the other species, yellow. Capsule nearly an inch long. (M. & B. 335.)

386. LABORDEA MEMBRANACEA (sp. nov.): foliis amplis ovalibus breviter acuminatis membranaceis subtus pallidis in petiolum basi attenuatis cum ramis novellis inflorescentiaque pilis atro-rufis papilloso-hirsutis; cyma sessili quasi umbellato-contracta; calyce subinflato 5-fido lobis lanceolatis nervosis. — Mountains above Honolulu, Oahu. — A small tree. Leaves 3 to 6 inches long, 1½ to 3 inches wide, thin and membranaceous. (M. & B. 149.)

387. LABORDEA (GENIOSTEMOIDES) TINIFOLIA, Gray, l. c. p. 322. An upright tree 25 or 30 feet high. (M. & B. 562, 610; Remy, 320, 360, 361, 361$^{\text{bis}}$.)

Apocynaceæ.

388. ALYXIA OLIVÆFORMIS, Gaud. Bot. Freyc. Voy. p. 451. *A. sulcata*, Hook. & Arn. Bot. Beech. Voy. p. 90. (M. & B. 99; Remy, 369, 370.)

389. RAUWOLFIA SANDWICENSIS, A. DC. Prodr. 8, p. 339. (M. & B. 113, 336; Remy, 368.)

390. OCHROSIA SANDWICENSIS, A. DC. Prodr. 8, p. 357; Gray, in Proceed. Am. Acad. 5, p. 333. *Cerbera parviflora*, Hook. & Arn. Bot. Beech. Voy. p. 90, non Forst. — There are specimens of an *Ochrosia* with oblong-elliptical obtuse coriaceous leaves, and bearing fruit, in Dr. Wm. Hillebrand's collection; but, wanting flowers, they are too imperfect to be identified with any known species, or to warrant describing as new. (M. & B. 447; Remy, 366, 367.)

391.† VINCA ROSEA, L. (M. & B.)

Oleaceæ.

392. OLEA SANDWICENSIS, Gray, in Proceed. Am. Acad. 5, p. 331. (M. & B. 338; Remy, 479, 482.)

Nyctaginaceæ.

393. PISONIA GRANDIS, Parkinson, ined.; R. Br. Prodr. p. 422. *P. inermis*, Forst. Prodr. n. 397, non Jacq. *P. procera*, Bertero, Deless. Ic. Sel. t. 87. *P. Brunoniana*, Endl. (Remy, 217?)

394. Pisonia excelsa, Blume, Bijdr. p. 735. *P. macrocarpa*, Presl. Symb. t. 56. *P. Forsteriana*, Endl. in Rel. Meyen. t. 51. *P. Sinclarii*, Hook. f. Fl. N. Zeal. 1, t. 50. *P. sylvestris*, Teesm. *P. mitis*, Endl. *P. viscida*, Seem. in Bonpl. *P. umbellifera*, Seem. l. c. & in Journ. Bot. 1, p. 244. (M. & B. 347, 622; Remy, 219.)

395. Bœrhaavia diffusa, Linn. Spec. p. 4. (M. & B. 111.)

Phytolaccaceæ.

396. Phytolacca Bogotensis, HBK. Nov. Gen. & Spec. 2, p. 183; Moq. in DC. Prodr. 13, 2, p. 33. *P. Abyssinica*, Hook. & Arn. Bot. Beech. Voy. 94. *P. brachystachys*, Moq. in DC. l. c. p. 31. (M. & B. 81, 426, 460; Remy, 212.)

Polygonaceæ.

397. Rumex giganteus, Ait. H. Kew. ed. 2, 2, p. 323; Meisn. in A. DC. Prodr. 14, p. 53. — Climbing to the height of forty or fifty feet in the dense forest of Hawaii, and highly ornamental when in fruit, bearing large loose panicles; the calyces turning to a brilliant red. (Remy, 211; M. & B.)

398. Rumex longifolius, DC.? or some allied species, noticed on the Kaala Mountains by the botanists of the Exploring Expedition, (fide Gray, Bot. S. Pacif. Expl. Exp. ined.)

399.† Polygonum glabrum, Willd. (M. & B. 19; Remy, 210.)

Santalaceæ.

400. Santalum Freyienetianum, Gaud. Bot. Freyc. Voy. t. 45; Gray, in Proceed, Am. Acad. 4, p. 326, & in Bot. S. Pacif. Expl. Exp. ined.; A. DC. Prodr. 14, p. 682. Var. Gaudichaudii, Gray, Bot. Expl. Exp. l. c. Var. ellipticum, Gray, Bot. Expl. Exp. l. c. *S. ellipticum*, Gaud. l. c. p. 442; A. DC. Prodr. 14, p. 682; Gray, in Proceed. Amer. Acad. 4, p. 327. Var. latifolium, Gray, in Proceed. l. c. *S. paniculatum*, Hook. & Arn. Bot. Beech. Voy. p. 94. M. & B. 353; Remy, 503, 506, 507, 509.)

401. Santalum pyrularium, Gray, in Bot. Expl. Exp. l. c., & in Proceed. Am. Acad. l. c. p. 327. Vars. *α.* & *β.* Gray, l. c. (Var. *α.* M. & B. 625; Remy, 505. Var. *β.* M. & B. 396.)

402. Exocarpus Gaudichaudii, A. DC. Prodr. 14, p. 90; Gray, Bot. Expl. Exp. l. c. *E. cupressiformis*, Hook. & Arn. Bot. Beech. Voy. p. 95, non R. Br. Var. *β.* foliosa, Gray, l. c. (Var. *α.* M. & B. 299; Remy, 511. Var. *β.* M. & B. 117; Remy, 513, 514.)

Lauraceæ.

403. OREODAPHNE?—We collected specimens of a small tree growing at an elevation of about 2000 feet on the mountains above Waimea, Kauai, in fruit and with very young flower-buds, which may be an *Oreodaphne.* The young branches and inflorescence are silky with a rusty-colored pubescence; the leaves (2½ to 4 inches long, by 14 to 20 lines wide) are densely reticulate-veiny but not scrobiculate, smooth and shining above and glabrate beneath; the panicles are short, axillary, and few-flowered. (M. & B. 584.)

404. CASSYTHA FILIFORMIS, Linn. (M. & B.)

Thymeleaceæ.

405. WICKSTRŒMIA FŒTIDA, Gray, in Seemann's Jour. Bot. 3, p. 302. Var.? OAHUENSIS, Gray, l. c. (M. & B. 16, 130; Remy, 223.)

406. WICKSTRŒMIA ELONGATA, Gray, l. c. p. 303.

407. WICKSTRŒMIA SANDWICENSIS, Meisn. in DC. Prodr. 14, p. 545; Gray, l. c. 303.

408. WICKSTRŒMIA UVA-URSI, Gray, l. c. (M. & B. 623; Remy, 225.)

409. WICKSTRŒMIA BUXIFOLIA, Gray, l. c. p. 304.

410. WICKSTRŒMIA PHILLYREÆFOLIA, Gray, l. c. p. 304. (M. & B. 304; Remy, 222.)

Chenopodiaceæ.

411. CHENOPODIUM SANDWICHIEUM, Moq. Chenop. Enum. p. 28; & in DC. Prodr. 13, 2, p. 67. (M. & B. 315; Remy, 209.) Var.? MARITIMA: humilius; foliis farinosissimis; paniculis densis.—On the coast, Oahu. (M. & B. 527.)

412. CHENOPODIUM MURALE, Linn.; Moq. in A. DC. l. c. p. 69. (M. & B. 80.)

413. CHENOPODIUM ALBUM, Moq. in A. DC. l. c. p. 70. Var. CANDICANS. *Atriplex Oahuensis,* Meyen, Riese, 2, p. 127.

414. CHENOPODIUM AMBROSIOIDES, Linn.; Moq. in A. DC. l. c. p. 72.

415. BATIS MARITIMA, L.; Torr. in Smithson. Contrib. (M. & B. 118.)

Basellaceæ.

416.* BASELLA RUBRA, L. (M. & B.)

Amaranthaceæ.

417. PTILOTUS (NOTOTRICHIUM) SANDWICENSIS, Gray,* in Bot. S. Pacif. Expl. Exp. ined. (M. & B. 590; Remy, 207.)

418. ACHYRANTHES (ACHYROPSIS) MUTICA, Gray,† in Bot. S. Pacif. Expl. Exp. ined. (Remy, 208.)

419. ACHYRANTHES SPLENDENS, Mart. in A. DC. Prodr. 13, 2, p. 316. (Remy, 206.)

420. ACHYRANTHES BIDENTATA, Blume, Bijdr. p. 545; A. DC. l. c. p. 312. (Remy, 209.)

421. AERVA SERICEA, Moq. in A. DC. Prodr. l. c. p. 305.

422. EUXOLUS LINEATUS, Moq., in A. DC. Prodr. l. c. p. 276.

423. CHARPENTIERA OVATA, Gaud. Bot. Freyc. Voy. p. 444, t. 48; Moq. in A. DC. Prodr. l. c. p. 322. *C. obovata*, Gaud. l. c. t. 47; Moq. l. c. I see no sufficient reason for keeping these two species apart. (M. & B. 79; Remy, 205.)

Urticaceæ.

424. URTICA SANDWICENSIS, Weddell, Monogr. Urtic. p. 67.

425. FLEURYA INTERRUPTA, Gaud.: var. SPICATA, Wedd. l. c. p. 116. *Fleurya spicata*, Gaud. Bot. Freyc. Voy. p. 497.

426. URERA GLABRA, Wedd. l. c. p. 149. *Procris glabra*, Hook. & Arn. Bot. Beech. Voy. p. 96; & var. MOLLIS, Wedd. (M. & B. 398, 400; Remy, 200.)

427. URERA SANDWICENSIS, Wedd. in Ann. Sc. Nat. sér. 3, 18, p. 177, & in Urtic. p. 150. (Remy, 202.)

---

* "P. fruticosus, tomentoso-sericeus; foliis oppositis petiolatis ovatis ovalibusque nunc obovatis subtus incanis; spicis ovatis seu cylindraceis pedunculatis vel ad apicem pedunculi ternato-confertis; sepalis ovato-oblongis obtusis dorso cum bracteis rhachique villosissimis, fructiferis conniventibus.

"Var. α: ramis floriferis etiam lignescentibus; foliis ovatis nunc ovato-lanceolatis plerisque acuminatis, rarius ovali-oblongis obtusis basi pl. m. attenuatis.

"Var. β. KAVAIENSIS: ramis fere herbaceis; foliis obovatis obtusissimis basi magis attenuatis subtus tomento subaurato." Gray, Mss.

Hawaii, near the coast; Oahu. Var. β. Coast of Kauai.

† "A. glabella; caule fruticoso ramosissimo; foliis obovatis spathulatis seu fere lanceolatis obtusis viridibus in petiolum gracilem attenuatis; spicis ovatis sessilibus densifloris nunc paucifloris, rhachi subvillosa; bracteis bracteolisque late ovatis mucronulatis flore patente 2-3-plo brevioribus; sepalis 5 ovato-lanceolatis obtusiusculis coriaceo-paleaceis trinerviis; staminibus antheriferis 5; staminodiis oblongis apice laciniatis filamenta adæquantibus."

428. PILEA PEPLOIDES, Hook. & Arn. l. c. p. 96; Wedd. Urtic. p. 179. *P. pygmæa*, Miq. in Zoll. Syst. Verzeichn. p. 106. *Dubrueilia peploides*, Gaud. l. c. p. 495. (M. & B. 11; Remy, 199.)

429. BŒHMERIA STIPULARIS, Wedd. in Ann. Sc. Nat. sér. 4, 1, p. 200, & Urtic. p. 377. *Urtica grandis*, Hook. & Arn. l. c. p. 95. (M. & B. 397; Remy, 195.)

430. PIPTURUS ALBIDUS, Gray, ined. *P. Taitensis*, Wedd. in Ann. Sc. Nat. sér. 4, 1, p. 196, & Urtic. p. 449. *Bœhmeria albida*, Hook. & Arn. l. c. p. 96. Var. GAUDICHAUDIANUS, Wedd. Urtic. l. c. *Pipturus Gaudichaudianus*, Wedd. in Ann. Sci. Nat. l. c. — This certainly should retain the specific name of Hooker and Arnott, especially as the name *Taitensis*, given by Weddel, is wholly inappropriate for a plant entirely unknown to Tahiti. (M. & B. 45; Remy, 191.)

431. NERAUDIA MELASTOMÆFOLIA, Gaud. l. c. p. 500, t. 117; Wedd. Urtic. p. 438, t. 12. *N. ovata*, Gaud. l. c. *Bœhmeria melastomæfolia*, Hook. & Arn. l. c. p. 96. (M. & B. 220.)

432. NERAUDIA SERICEA, Gaud. l. c. p. 500, & Bot. Voy. Bonite, t. 133; Wedd. l. c. p. 439. (M. & B. 624.)

433. TOUCHARDIA LATIFOLIA, Gaud. Bot. Voy. Bonite, t. 94; Wedd. Urtic. p. 142, t. 13. (M. & B. 399.)

434.* ARTOCARPUS INCISA, Linn.

435.* BROUSONETTIA PAPYRIFERA, Vent.

436. MORUS PENDULINA, Endlich. Prodr. Fl. Norfolk. no. 34. Our plant appears to be the same as the Norfolk Island plant described by Endlicher, and belongs to a section of the genus which, with *Morus Brunoniana*, of Australia, (figured by Endlicher in Atakt. Bot. t. 32, from a drawing by Ferd. Bauer,) has a dry and unchanged calyx in fruit. (Remy, 203, 204.)

Euphorbiaceæ.

437. EUPHORBIA CLUSIÆFOLIA, Hook. & Arn. Bot. Beech. Voy. p. 95; Boiss. in A. DC. Prodr. 15-2, p. 11. (M. & B. 627.)

438. EUPHORBIA (ANISOPHYLLUM, GYMNADENIÆ) REMYI (Gray, Bot. S. P. Expl. Exp. ined.): "fruticosa, orgyalis, glabra; ramis denudatis ad articulationes nodosis; stipulis in unam interpetiolarem triangularem coalitis; foliis breviuscule petiolatis oblongis vel ellipticis submembranaceis lucidis tenuiter crebre penninerviis integerrimis subacutis vel subacuminatis, basi rotundata fere æquali rarius angustata in-

æquali; cymis axillaribus 1–5-cephalis subsessilibus; pedicellis folio multo brevioribus; involucri campanulati lobis minimis, glandulis transverse ovalibus; capsulæ (aut glabræ aut tomentulosæ) coccis vix carinatis; semine tetragono-obovato scrobiculato-rugoso. — Kauai. Oahu. — Allied to *E. clusiæfolia,* but much taller, inclining to be simple stemmed and arborescent, glabrous, except the slight pubescence on the involucre, and a deciduous tomentum on the capsule. Leaves from 1½ to 5 inches long, and from 10 to 20 lines wide, much thinner than in *E. clusiæfolia,* and the primary veins (from 20 to 30 pairs) more evident, but the ultimate reticulation of veinlets less distinct; the apex never retuse, usually pointed. Petioles 3 to 6 lines long. Pedicels 2 to 3 lines long, sometimes solitary. Lobes of the involucre almost obsolete, emarginate. Styles short; their lobes short and thickish. Capsules small, acutely triangular-3-lobed, and glabrous (immature?), or much larger, 2 lines long, the cocci obtuse on the back. Seed coarsely scrobiculate-rugose." *Gray, mss.* (H. Mann; Remy, 598.)

439. EUPHORBIA MULTIFORMIS, Gaud. Bot. Freyc. Voy. absq. descr.; Hook. & Arn. l. c.; Boiss. in DC. l. c. Var. β. TOMENTELLA (Boiss. l. c.): ramis junioribus et foliis tomentellis. Var. γ. TENUIOR (Gray, l. c. ined.): glabra; ramis gracilibus; foliis ellipticis oblongisve tenuioribus viridioribus. Var. δ. LORIFOLIA (Gray, l. c. ined.): foliis lineari-elongatis (bipollicaribus) crassis; pedicellis involucro 2–4-plo longioribus. Var. ε. CELASTROIDES (Gray, l. c. ined.): glabra; foliis obovato-oblongis spathulatisve basi angusta truncato-subcordata; pedicellis involucro pluries longioribus. — *E. celastroides,* Boiss. in DC. l. c. (M. & B. 101 [γ.], 389 [δ.]; Remy, no. lost.)

440. EUPHORBIA HOOKERI, Steud. Nom. 1, p. 612; Boiss. in DC. l. c. *E. myrtifolia,* Hook. & Arn. l. c. (M. & B. 103.)

441. EUPHORBIA CORDATA, Meyen, Reise, 2, p. 150; Rel. Meyen. p. 412; Boiss. in DC. l. c. p. 13. (M. & B. 106; Remy, 589.)

442.† EUPHORBIA PILULIFERA, Linn. Amœn. Ac. 3, p. 114, non herb.; Boiss. in DC. l. c. p. 21. (M. & B. 35; Remy, 597.)

443.† EUPHORBIA HELISCOPIA, Linn. Spec. p. 658; Boiss. in DC. l. c. p. 136.

444. ANTIDESMA PLATYPHYLLUM (sp. nov.): arborescens; foliis orbiculatis oblongisve obtusis vel acutiusculis chartaceis glabris breviter seu brevissime petiolatis; paniculis ferrugineo-puberulis; bracteis ova-

tis; floribus spicatis; calyce masc. sessili 5-vel plerumque 4-lobo 4-5-(rarissime 6-) andro extus ferrugineo-tomentoso intus glabro; disco lobato glabro; ovarii rudimento obconico hirsuto; stigmate terminali; drupa pedicellata. — Hawaii, Maui, Oahu, Kauai, not uncommon in forests at an elevation of 2,000 or 3,000 feet. — Very closely related to *A. fallax* of Penang, as described by Müller in DC. Prodr. 15-2, p. 253, but differing in the rounder and more obtuse and shorter-petioled leaves, and in the calyx being glabrous within. (M. & B. 427; Remy, 609; Hillebrand, 278$^{\text{bis}}$.)

445. PHYLLANTHUS SANDWICENSIS, Müll. Arg. in Linnæa, 32, p. 31, & in DC. l. c. p. 389. *P. distichus*, Hook. & Arn. Bot. Beech. Voy. p. 95. (M. & B. 104; Remy, 601, 603.)

446.† PHYLLANTHUS NIURI, Linn. (W. T. Brigham.)

447. CLAOXYLON SANDWICENSIS, Müll. Arg. in Linnæa, 34, p. 165, & in DC. l. c. p. 780. (M. & B. 586; Remy, 606.)

448. ALEURITES MOLUCCANA, Willd. Spec. 4, p. 590; Müll. in DC. l. c. p. 723. *A. triloba*, Forst. (M. & B. 51; Remy, 600.)

449.* MANIHOT UTILISSIMA, Pohl. Pl. Bras. 1, p. 32, t. 24, inclus. β & γ, ex Müll. in DC. l. c. p. 1064. (M. & B.)

450.* RICINUS COMMUNIS, Linn. (M. & B.)

Piperaceæ.

451.* PIPER (MACROPIPER) METHYSTICUM, Forst. Prodr. Ins. Aust. n. 21; Hook. & Arn. Bot. Beech. Voy. p. 96. *Macropiper*, Miq. in Comment. Phytogr. p. 36, & Syst. Pip. p. 217.

452. PEPEROMIA PALLIDA, A. Dietr. Spec. 1. p. 153; Miq. l. c. p. 103; Hook. & Arn. l. c. *Piper pallidum*, Forst. l. c. n. 24. — I am not able to give a satisfactory list of species of the Islands, nor can much dependence be placed on these determinations. There are some forms which do not agree with any descriptions which I can find; but rather than add any further confusion by introducing new names, I merely refer to them in this way, especially as the forthcoming volume of the Prodromus will soon exhibit all that is now known concerning them.

453. PEPEROMIA MEMBRANACEA, Hook. & Arn. l. c.; Miq. l. c. p. 120. (Hillebrand, 453, pro parte; M. & B.)

454. PEPEROMIA GAUDICHAUDII, Miq. l. c. p. 137. — This appears scarcely to differ from *P. membranacea*, allowing that (as Miquel's character does not) to have both opposite and whorled leaves.

455. PEPEROMIA SANDWICENSIS, Miq. l. c. p. 126, & Ill. Pip. p. 19, t. 14. (M. & B.)

456. PEPEROMIA INSULARUM, Miq. in Hook. Lond. Journ. Bot. 4, p. 422; Walp. Ann. 3, p. 340.

457. PEPEROMIA LATIFOLIA, Miq. Syst. p. 128, & Ill. Pip. p. 20, t. 15. (M. & B. 243.)

458. PEPEROMIA HYPOLEUCA, Miq. l. c. p. 136, & Ill. Pip. p. 21, t. 17. (Remy, 187, 189; Hillebrand, 453, pro parte.)

459. PEPEROMIA PACHYPHYLLA, Miq. l. c. p. 137. *P. verticillata*, Hook. & Arn. l. c. *Piper verticillatum*, Linn.; Spreng.

460. PEPEROMIA MACRÆANA, Miq. in Seem. Journ. Bot. 4, p. 145.

461. PEPEROMIA LEPTOSTACHYA, Hook. & Arn. l. c.; Miq. Syst. Pip. p. 138.

462. PEPEROMIA REFLEXA, A. Dietr. l. c.; Miq. l. c. p. 169. *Piper reflexum*, Linn. fil. Suppl. p. 91. Forma FORSTERIANA. *Piper tetraphyllum*, Forst. l. c. n. 25. *Peperomia reflexa*, Guill. Zeph. Tait. *P. tetraphylla*, Hook. & Arn. l. c. (M. & B. 242; Remy, 174.)

463. PEPEROMIA ———. A species with narrowly lanceolate, whorled, one-nerved leaves, 9 to 12 lines long, by 2 or 3 lines wide, and small, short-peduncled, axillary and terminal spikes. (Remy, 184.)

Palmeæ.

464. PRITCHARDIA MARTII, Herm. Wendl. in Bonplandia, 10, p. 199. *Livistonia? Martii*, Gaud. Bot. Bonite, t. 58, 59; Mart. Palm. p. 242.

465. PRITCHARDIA GAUDICHAUDII, Herm. Wendl. l. c. *Livistonia? Gaudichaudii*, Mart. l. c. (M. & B. 419.)

466. There is a third Palm with flabellate leaves, growing on inaccessible cliffs, which, I doubt not, is different from either of the preceding.

467.* COCOS NUCIFERA, Linn. Spec. p. 1658.

Pandanaceæ.

468.* PANDANUS VERUS, Rumph. Herb. Amb., ex Kurz, in Seem. Journ. Bot. 5, p. 125. *P. odoratissimus*, Linn. f. Suppl. p. 424.

469. FREYCINETIA ARBOREA, Gaud. Bot. Freyc. Voy. p. 431, t. 41. *F. scandens*, Hook. & Arn. Bot. Beech. Voy. p. 97, non Gaud. — There is only one *Freycinetia* known in the Hawaiian Islands, and this is well figured and described by Gaudichaud, the founder of the

genus, under the name of *F. arborea.* It is, however, never known to grow upright, but climbs over and among trees, making a dense tangle, and is expressively named by the natives i-e – i-e, i-e meaning *to step over.* Possibly Gaudichaud may have been misled by plants growing over the *Dracæna aurea,* and have mistaken the two plants for one, the leaves being somewhat similar; but his specific name, however ill-chosen, could not now well be superseded. Hooker & Arnott, having scandent specimens destitute of flower and fruit, unfortunately referred them to *F. scandens,* Gaud. l. c., of Molucca and Timor, a species with a single small stigma, and in other respects totally different from the Hawaiian one, which has a clavate ovary with a truncate apex bearing 5 to 7 stigmas. This has created a confusion in all subsequent works, which even Kurtz, with Gaudichaud's figures before him, has failed to clear up in his recent monograph of the genus (in Seem. Journ. Bot. 5, p. 133). So far from the species "not existing in nature," it is one of the two species upon which Gaudichaud founded the genus, and differs much from *F. scandens.* (M. & B.)

Aroideæ.

470.* COLOCASIA ANTIQUORUM, var. ESCULENTA, Schott. — The natives distinguish a great number of varieties, some of which yield a much better esculent than others. There is a form which grows high up in mountain valleys, known as *apii,* which has very large leaves and a small and useless corm. The cultivation of the *kalo* is carried on mostly, if not exclusively, by planting the top of the corm (sliced off with the bases of the leaves adhering) usually in artificial ponds: but where there are no surface streams, it is carefully mulched.

Taccaceæ.

471. TACCA PINNATIFIDA, Forster, Gen. Pl. Ins. Aust. t. 35; Seemann, Journ. Bot. 3, p. 261. *T. oceanica,* Nutt. in Amer. Journ. Pharmac. 9, with a plate.

Naiadaceæ.

472. NAJAS MAJOR, All., var. ANGUSTIFOLIA, A. Braun, in Seem. Journ. Bot. 2, p. 275.

473. RUPPIA MARITIMA, Linn. First detected by Chamisso.

474. POTAMOGETON GAUDICHAUDII, Cham. in Linnæa, 2, p. 199.

475. POTAMOGETON FLUITANS, var. OWAIHIENSIS, Cham. in Linnæa, 2, p. 228.

476. POTAMOGETON PAUCIFLORUS, Pursh, Fl. 1, p. 121; Cham. l. c. p. 176, t. 4, f. 7. (M. & B. 57.)

Zingiberaceæ.

477. ZINGIBER ZERUMBET, Rosc. in Trans. Linn. Soc. 8, p. 384. (M. & B.)

478.† CANNA INDICA, Linn., has run wild in many places. Also a yellow variety?

Iridaceæ.

479. SISYRINCHIUM ACRE (sp. nov.): glaberrimum; caule simplici ancipiti; foliis radicalibus linearibus 8–10-nerviis scapo brevioribus; spatha communi pedicellis paucis æquilongis vel brevioribus; perigonio flavo, lobis ovatis obtusis 5–7-nerviis; filamentis antheris brevioribus brevissime monadelphis; stigmatibus (stylo longioribus) perigonio brevioribus; capsula obovata. — Common near Kilauea, Hawaii, and on the mountains of that and other of the islands, in dry land. Remarkable for its very short style, and barely monadelphous filaments. The acrid juice of the root is used by the natives for tattooing; applied to the skin it raises blisters, and leaves an indelible blue stain. (M. & B. 438; Remy, 166.)

Dioscoreaceæ.

480.* HELMIA BULBIFERA, Kunth, Enum. Pl. 5, p. 435. *Dioscorea bulbifera*, Linn. (Remy, 162.)

481.* DIOSCOREA PENTAPHYLLA, Linn.

Smilacineæ.

482. SMILAX SANDWICENSIS, Kunth, l. c. p. 253. (M. & B. 222.)

483. SMILAX ANCEPS. Willd. Spec. 4, p. 782. (Remy, 157.)

Commelynaceæ.

484.† COMMELYNA CAYENNENSIS, Rich. *C. agraria*, Kunth. (M. & B. 57.)

485.† TRADESCANTIA FLORIBUNDA, Kunth, Enum. Pl. 4, p. 89. (W. T. Brigham; Hillebrand.)

Orchidaceæ.

486. ANŒCTOCHILUS (MYRMECHIS) SANDWICENSIS, Lindl. Gen. & Sp. Orch. p. 500.

487. ANŒCTOCHILUS JAUBERTII, Gaud. Bot. Bonite, t. 100. — This

belongs to the section of the genus which has the lip fimbriate or dentate on the margin, and can thus be easily distinguished from *A. Sandwicensis*, the lip of which is entire on the margin. (M. & B. 469, 470.)

488. LIPARIS HAWAIENSIS (sp. nov.): foliis binis ovalibus oblongisve obtusis membranaceis plicatis petiolatis scapo angulato dimidio brevioribus; racemo plurifloro; labello obovato integerrimo vel crenato concolore (flavido); sepalis lanceolatis; petalis filiformibus; capsula obovato-clavato costata. — In mountain woods, on trees. — Intermediate between *L. Lœselii* and *L. liliifolia* in general aspect. Leaves 2½ to 4 inches long, by 1 to 2½ inches wide, abruptly contracted into a conspicuous vaginate petiole of an inch or two in length. The labellum is about 3 lines long, and a little shorter than the sepals. The bulb is small. (M. & B. 471.)

Liliaceæ.

489. DRACÆNA AUREA (sp. nov.): arborea, ramosa; foliis coriaceis planis linearibus attenuato-acuminatis; paniculis recurvo-pendulis folioso-bracteatis; pedicellis laxe racemosis solitariis raro geminis; perigonio (sesqui-bipollicari) tubuloso subinfundibuliformi leviter curvato flavo, tubo lobis erectis lineari-oblongis triplo longiore. — Not uncommon throughout the islands. — A tree 20 to 25 feet high. The linear and recurved-spreading leaves 1½ to 2 feet long, an inch or less wide. Panicle a foot long, more or less, the bright lemon-yellow flowers very showy. This differs from the typical species of the genus in the erect lobes as well as the long tube of the perigonium. The berry is red, 4 to 8 lines in diameter, and is much sought after by birds.

490.* CORDYLINE TERMINALIS, Kunth, in Act. Acad. Berol. 1820, p. 30. *Dracæna terminalis*, Reichard; Gaud. Bot. Freyc. Voy. p. 91; Hook. & Arn. Bot. Beech. Voy. p. 97. *Cordyline Eschscholtziana*, Mart. in Schult. Syst. 7. p. 347. (M. & B.)

491. DIANELLA ODORATA, Blume, Enum. 1, p. 13; Hook. & Arn. l. c. p. 218. *D. Sandwicensis*, Hook. & Arn. l. c. p. 97. (M. & B. 89, 364; Remy, 152.)

492. ASTELIA MENZIESIANA, Smith, in Rees, Cycl. App. — Leaves narrowly linear, glabrate above, silky-hairy and chaffy beneath, as is the rest of the plant, excepting the perianth, which is nearly or quite glabrous, its divisions united at the base to form a short tube. (M. & B. 217.)

493. ASTELIA VERATROIDES, Gaud. Bot. Freyc. Voy. p. 420, t. 31. Perhaps only a form of the last; but the leaves are broader, often 3

inches wide, and the whole plant is much more silky, and often densely chaffy. Divisions of the perianth rather broader than in *A. Menziesiana,* and very little if at all united at the base. (M. & B. 392.)

Juncaceæ.

494. Luzula campestris, DC. Fl. Fr. 3, p. 161. (M. & B. 171, 323; Remy, 151.)

495. Joinvillea ascendens, Gaud. Bot. Bonite, t. 39, 40. (M. & B. 330.)

Cyperaceæ.

496. Cyperus trachysanthos, Hook. & Arn. Bot. Beech. Voy. p. 99.

497. Cyperus Prescottianus, Hook. & Arn. l. c. p. 100.

498. Cyperus caricifolius, Hook. & Arn. l. c. p. 99. (M. & B. 54, perhaps referable here.)

499. Cyperus multiceps, Hook. & Arn. l. c. p. 100.

500. Cyperus mucronatus, Rottb. Gram. 19, t. 8, f. 4; Hook. & Arn. l. c. p. 99. (M. & B. 43; Remy, 120.)

501. Cyperus brunneus, Sw. Fl. Ind. Occ. 1, p. 116; Hook. & Arn. l. c. p. 99. (M. & B. 14; Remy, 115.)

502. Cyperus polystachyus, Rottb. Gram. 39, t. 11, f. 1. (M. & B. 70; Remy, 114.)

503. Cyperus pennatus, Lam. Ill. 1, p. 114. *C. canescens,* Vahl. Enum. 2, p. 355. *Mariscus albescens,* Gaud. Bot. Freyc. Voy. p. 415. (M. & B.; Remy, 118.)

504. Cyperus viscosus, Ait. Kew, 1, p. 79; Jacq. Ic. 2, t. 295.

505. Cyperus cæspitosus, Poir. Dict. 7, p. 250?; Hook. & Arn. l. c. p. 99.

506. Cyperus paniculatus, Rottb.? Hook. & Arn. l. c.

507. Cyperus strigosus, Linn.; Hook. & Arn. l. c.

508. Cyperus auriculatus, Nees & Meyen, in Linnæa, 9, p. 285.

509. Cyperus (Mariscus) Kunthianus. *M. Kunthianus,* Gaud. Bot. Freyc. Voy. p. 415; (M. & B. 324.)

510. Cyperus (Mariscus) phleoides. *M. phleoides,* Nees, ex Steud. Glum. p. 62.

511. Cyperus (Mariscus) Hawaiensis (sp. nov.): culmo triquetro lævi basi folioso; foliis linearibus margine scabris culmum adæquantibus; involucro 6–8-phyllo, foliolis 2 elongatis; spicis ovalibus pluribus subsessilibus arcte congestis vel breviter pedunculatis; squamis inferi-

oribus minimis, mediis triplo majoribus 9-nerviis lævibus, interioribus brevioribus uninerviis. — On the mountains of Hawaii, Maui, and Kauai. — Somewhat resembling *M. phleoides*, but smaller, and the spikes shorter. (M. & B. 246.)

512.† KYLLINGIA MONOCEPHALA, Rottb. Gram. p. 13, t. 4. (M. & B. 23; Remy, 123.)

513. ELEOCHARIS OBTUSA, Schult. Mant. 2, p. 89; Gaud. Bot. Freyc. Voy. p. 414; Hook. & Arn. l. c. (M. & B. 27; Remy, 128.)

514. ELEOCHARIS PALUSTRIS, R. Brown. Prodr. p. 244.

515. SCIRPUS MARITIMUS, Linn.; Hook. & Arn. l. c. p. 98. (M. & B. 69, 230; Remy, 129.)

516. SCIRPUS RIPARIUS, Presl, Rel. Hænk. 1, p. 192. (M. & B. 25.)

517. FIMBRISTYLIS CYMOSA, R. Br. Prodr. p. 228; Hook. & Arn. l. c. p. 98. (M. & B. 22.)

518. FIMBRISTYLIS UMBELLATO-CAPITATA, Steud.? A very variable plant, from Waterlandt Island, Tutuilla, etc., as well as the Hawaiian Islands. The spikes are always sessile in a head, but the heads are solitary, or few, or numerous, subtended by 3 – 5 very short (or with one or two longer) awl-shaped bracts. The squamæ are ovate, acutish, concave, and somewhat keeled; the styles trifid and the stamens two; the achenia are less convex on one side than the other, three-angled and very obtuse at the apex. Probably not the species quoted, from which it differs in several particulars, but I am unable to identify it satisfactorily, though it must be well known.

519. RHYNCHOSPORA LAVARUM, Gaud. Bot. Freyc. Voy. p. 415; Hook. & Arn. l. c. p. 98. (M. & B. 219; Remy, 134.)

520. RHYNCHOSPORA THYRSOIDEA, Nees & Meyen, 9, p. 297. *R. scleroides*, Hook. & Arn. l. c. p. 99. (M. & B. 90; Remy, 132.)

521. CLADIUM LEPTOSTACHYUM, Nees & Meyen; in Linnæa, 9, p. 301, & Rel. Meyen. p. 115. (M. & B. 112.)

522. BAUMEA MEYENII, Kunth, Enum. p. 314. *Vincentia angustifolia*, Hook. & Arn. l. c. p. 98. (M. & B. 92; Remy, 138.)

523. VINCENTIA ANGUSTIFOLIA, Gaud. Bot. Freyc. Voy. p. 417, non Hook. & Arn. l. c.

524. GAHNIA GAUDICHAUDII, Steud. Glum. p. 164. *Lamprocarya Gaudichaudii*, Brongn. in Bot. Dup. Voy. p. 166. *Morelotia gahniæformis*, Gaud. Bot. Freyc. Voy. p. 416, t. 28. — Dr. Hooker, in Fl. N. Zeal., while, through some oversight, he refers *M. gahniæformis* to *L. affinis*, Brongn. (*Gahnia arenaria*, Hook. l. c.), speaks of the Hawaiian

plant as a different but closely allied species ; as it is. The character upon which Brown distinguished the genus *Lamprocarya* from *Gahnia* (that of not having a transversely grooved nut) only throws the most closely allied species into different genera.

525. GAHNIA BEECHEYI (sp. nov.) : glaberrima ; culmo tereti lævi ; foliis linearibus longissimis superne filiformibus reclinatis arcte convolutis margine scabris dorso aculeis parvis asperatis ; panicula (10 – 12-pollicari) spicis axillaribus (sesqui – bipollicaribus) multifloris ; bracteis ut foliis ; bracteolis ovato-lanceolatis mucronatis, carina ciliata ; spiculis unifloris ; squamis ovato-lanceolatis acutis, intimis obtusiusculis ; nuce oblonga obscure trigona flava nitida styli basi cuspidata intus transverse sulcata. — On mountain ridges at 1,000 to 3,000 feet elevation. — Apparently most nearly allied to *G. schœnoides* of Tahiti. (M. & B. 91 ; Remy, 136 ; Macrae.)

526. GAHNIA GLOBOSA (sp. nov.) : glaberrima ; culmo tereti lævi ; foliis linearibus elongatis culmum superantibus convolutis subtus læviusculis, margine nervis supraque scabris ; spicis globosis axillaribus e spiculis (18 – 25) unifloris arcte congestis compositis ; bracteis e basi lata lanceolatis acuminatissimis ; bracteolis ovato-lanceolatis acuminatis ; squamis late ovatis orbiculatisve acuminatis, intimis obtusis ; nuce ovata flava extus longitudinaliter rugosa styli basi cuspidata intus haud sulcata. — With the preceding. — At once distinguished by the dense globose spikes in a short interrupted panicle, and the broadly ovate squamæ. Apparently often gathered by collectors, but by Hooker & Arnott confounded with *Morelotia Gahniæformis*, Gaud., and by others with *Lamprocarya affinis*, Brongn., &c. Probably identical with a poor specimen of Seemann's, no. 672, from the Viti Islands, which he has called *L. affinis*, Brongn. (W. T. Brigham.)

527. OREOBOLUS FURCATUS (sp. nov.) : dense pulvinato-cæspitosus, ramosus, foliosus ; foliis basi vaginantibus nervosis dense imbricatis lineari-subulatis acutis obtusiusculisve rigidis serrulatis ; scapo sulcato terminali simplici vel furcato 1 – 4-floro ; bracteis foliosis ; bracteolis scariosis ; perianthii foliolis ciliatis integerrimis. — On the summits of the mountains of Maui and Kauai. — Most nearly allied to *O. obtusangulus*, Gaud., from which it differs in its often several-flowered scape, in the leaves being serrulate, etc. (M. & B. 436 ; U. S. Expl. Exped.)

528. SCLERIA TESTACEA, Nees, l. c. 9, p. 303. (M. & B. 329.)

529. CAREX COMMERSONIANA, Sieb. ex Kunth, Enum. p. 291. (M. & B. 260, 391.)

530. Carex Meyenii, Nees, in Rel. Meyen. p. 123; Steud. Glum. p. 195. (Remy, 141, fide Boott.)

531. Carex Wahuensis, C. A. Meyer, Cyp. Nov. in Mem. Acad. St. Petersb. 1, p. 218, t. 10; Boott, Ill. Gen. Carex, 3, p. 111, t. 351-354. (M. & B. 328, 331; Remy, 145.)

532. Carex nuptialis, Boott, in herb. Gray. (Remy, 142.)

533. Carex Prescottiana, Boott, in Linn. Trans. 20, p. 135, & Ill. Gen. Carex, 1, p. 45, t. 115. (M. & B. 325; Remy, 148.)

534. Carex festiva, Dewey, in Am. Journ. Sc. 29. (M. & B. 332; Remy, 146.)

535. Uncinia Lindleyana, Kunth, Enum. 2, p. 526. (M. & B. 437; Remy, 140.)

Gramineæ.

The Grasses being all in the hands of Colonel Munro, I cannot at present give a list of them. They show considerable novelty, and a large proportion are peculiar to the Group. There are about fifty species.

*Filices.**

536. Gleichenia glauca, Hook. Sp. Fil. 1, p. 4. *Mertensia glauca,* Sw. Syn. Fil. p. 164 & 390 (non *Gleichenia glauca,* Sw.); Brack. Fil. S. Pacif. Expl. Exped. p. 292. (M. & B. 496.)

537. Gleichenia glabra, Brack. l. c. p. 292, sub *Mertensia.*

538. Gleichenia Owhyhensis, Hook. l. c. 1, p. 9. *Mertensia Hawaiensis,* (a much better name,) Brack. l. c. p. 295. (M. & B. 472.)

539. Gleichenia dichotoma, Hook. l. c. 1, p. 12. *Mertensia dichotoma,* Willd. Spec.; Gaud. Bot. Freyc. Voy. p. 301; Brack. l. c. p. 297. (M. & B. 145.)

540. Gleichenia emarginata, Brack. l. c. p. 297, t. 42. (M. & B. 495.)

541. Cibotium glaucum, Hook. & Arn. Bot. Beech. Voy. p. 108, (excl. syn. Kaulf. & Gaud.); Hook. l. c. 1, p. 82, t. 29, A; Brack. l. c. p. 279. (M. & B. 543; Remy, 48.)

---

* I have to thank Prof. D. C. Eaton, of New Haven, for most kindly rendering assistance and advice concerning all difficult points in this order. For the determinations and synonymy as here adopted, however, I am alone responsible.

542. Cibotium Chamissoi, Kaulf. Enum. Fil. p. 230, t. 1, f. 14; Hook. l. c. 1, p. 83; Brack. l. c. p. 279. *Pinonia splendens*, Gaud. Bot. Freyc. Voy. p. 369, t. 21. (M. & B. 141.)

543. Cibotium Menziesii, Hook. l. c. 1, p. 84, t. 29, C.; Brack. l. c. p. 280. (M. & B. 511; Remy, 50.)

544. Deparia prolifera, Hook. & Arn. l. c. p. 108; Hook. Gen. Fil. t. 44, B; Hook. Spec. l. c. 1, p. 84; Brack. l. c. p. 240. *D. Macræi*, Hook. & Grev. Ic. Fil. t. 154. *Dicksonia prolifera*, Kaulf. Enum. Fil. p. 225. *Cibotium proliferum*, Presl, Tent. Pterid. p. 69, t. 11, f. 10. (M. & B. 151.)

545. Odontoloma Macræana, Brack. l. c. p. 226. *Davallia Macræana*, Hook. & Arn. l. c. Referred by Hook. in Spec. Fil. 1, p. 175 to *D.* (*O.*) *Boryana*, Presl, but it appears to be sufficiently distinct. (M. & B. 148.)

546. Microlepia tenuifolia, Metten. *Davallia tenuifolia*, Sw. Syn. Fil. p. 133, 350; Hook. l. c. 1, p. 186; Brack. l. c. p. 248. *D. remota*, Kaulf. Enum. Fil. p. 223; Hook. & Arn. l. c. p. 108. (M. & B. 143; Remy, 47.)

547. Microlepia hirta, Presl, Tent. Pterid. p. 125; Brack. l. c. p. 239. *Dav. hirta*, Kaulf. l. c. p. 223; Hook. & Arn. l. c. p. 108; Hook. l. c. 1, p. 181. *Dicksonia Kaulfussiana*, Gaud. Bot. Freyc. Voy. p. 368?; Hook. l. c. 1, p. 71? (M. & B. 144; Remy, 44, 46.)

547^a. Microlepia polypodioides, Presl, l. c. *Dav. polypodioides*, Don; Hook. l. c. 1, p. 181. Recorded by Hooker as a native of the Islands, and mentioned by Brackenridge under *D. hirta*, but I have seen nothing like it.

548. Microlepia Mannii, Eaton (sp. nov.): "caudice repente; stipitibus basi fere nudis exarticulatis spithamæis crassitie pennæ corvinæ teretibus rhachique atris nitidis; fronde bipedali anguste lanceolata bipinnata; pinnis triangulari-lanceolatis 2 – 3-uncialibus costa tenui nigrescente instructis; pinnulis bipinnatifidis; segmentis ultimis opaco-viridibus lineari-spathulatis augustissimis venulis singulis donatis, fertilibus apice dilatatis sorumque transverse-oblongum ferentibus simplicibus vel sæpe ramum brevem e latere exteriori infra sorum emittentibus; involucris pallidis basi lata vel semicirculari adnatis. — Mountains of Waimea, Kauai, 2,000 to 3,000 feet above the sea. — This Fern is to be placed in the same group with *M. gibberosa* (*Davallia gibberosa*, Sw.), with which species it agrees pretty well in the position and form of the sori and involucres, though the black and shining

stipe and rhachis and the very narrow segments (about ¼ of a line wide) make it at once a very distinct and extremely elegant species." *Eaton, mss.* (M. & B. 546.)

549. CYSTOPTERIS DOUGLASII, Hook. l. c. 1, p. 200; Brack. l. c. p. 232. *C. Sandwicensis*, Brack. l. c. p. 234. (M. & B. 480.)

550. ADIANTUM CAPILLUS-VENERIS, Linn.; Hook. l. c. 2, p. 36; Gaud. Bot. Freyc. Voy. p. 404; Brack. l. c. p. 96. (M. & B. 138.)

551. PELLÆA TERNIFOLIA, Fee, Gen. Fil. p. 129; Hook. l. c. 2, p. 142. *Platyloma ternifolia*, Brack. l. c. p. 94. (M. & B. 262.)

552. PTERIS CRETICA, Linn.; Hook. l. c. 2, p. 159; Brack. l. c. p. 113. (M. & B. 252; Remy, 34.)

553. PTERIS IRREGULARIS, Kaulf. Enum. Fil. p. 189; Hook. l. c. 2, p. 173; Brack. l. c. p. 116. *P. alata*, Gaud. Bot. Freyc. Voy. p. 391, t. 19; Hook. & Arn. l. c. p. 107. (M. & B. 162; Remy, 35, 36.)

554. PTERIS EXCELSA, Gaud. Bot. Freyc. Voy. p. 388; Hook. l. c. 2, p. 183, t. 136; Brack. l. c. p. 115. (M. & B. 163.)

555. PTERIS AQUILINA, Linn.; Hook. l. c. 2, p. 196; Brack. l. c. p 119. *P. decomposita*, Gaud. Bot. Freyc. Voy. p. 393. (M. &. B. 484.)

556. PTERIS (LITOBROCHIA) DECIPIENS, Hook. l. c. 2, p. 209. *Pt. pedata*, Hook. & Arn. l. c. p. 107; Gaud. Bot. Freyc. Voy. p. 384. *Doryopteris pedata*, Brack. l. c. p. 103 "as far only as the specimens from the Sandwich Islands are concerned." Hook. l. c. (M. & B. 136.) *

557. PTERIS (LITOBROCHIA) DECORA, Hook. l. c. 2, p. 210. *Doryopteris decora*, Brack. l. c. p. 103. (M. & B. 253.)

558. SADLERIA CYATHEOIDES, Kaulf. Enum. Fil. p. 162; Hook. & Arn. l. c. p. 107. *Blechnum Fontanesianum*, Gaud. Bot. Freyc. Voy. p. 397, t. 15; Brack. l. c. p. 133. *Bl. Kaulfussianum*, Gaud. Bot. Bonite, t. 78. (M. & B. 155; Remy, 33.)

559. SADLERIA PALLIDA, Hook. & Arn. l. c. pp. 75 & 107. *Bl. pallidum*, Brack. l. c. p. 133. *Bl. Souleytianum*, Gaud. Bot. Bonite, t. 134. (M. & B. 188; Remy, 32.)

560. SADLERIA SQUARROSA. *Bl. squarrosum*, Gaud. Bot. Bonite, t. 2, f. 1-6. *Bl. polystichoides*, Brack. l. c. p. 134. — These Ferns

---

* *Pellæa geraniæfolia*, Fee, is recorded by Hooker, l. c. 2, p. 133, as a native of the Hawaiian Islands; but I presume he intends to correct that when he says on p. 209, "This I had at one time believed to be identical with *P. geraniæfolia*," &c. I have never seen, nor do I know of *P. geraniæfolia* occurring at the Hawaiian Islands.

appear to be sufficiently distinct. The first two species are decidedly arborescent, the trunk of *S. pallida* being often 6 feet high, while the whole plant is often 12 or 15 feet high, and of a much more erect manner of growth than *S. cyatheoides*. *S. squarrosa*, on the contrary, is diminutive in comparison with the two others, usually having but a very small trunk-like caudex, or none at all. I have seen specimens not over a foot high, including caudex and all, in luxuriant fructification.

561. DOODIA KUNTHIANA, Gaud. Bot. Freyc. Voy. p. 401, t. 14; Hook. & Arn. l. c. p. 107; Brack. l. c. p. 137. (M. & B. 165; Remy, 30.)

562. LINDSÆA (DIELLIA) ERECTA, Brack. l. c. p. 218, t. 31, sub *Diellia*. (M. & B. 483.)

563. LINDSÆA (DIELLIA) FALCATA, Brack. l. c. p. 219, t. 31, sub *Diellia*.

564. LINDSÆA (DIELLIA) PUMILA, Brack. l. c. sub *Diellia*.

565. ASPLENIUM (THAMNOPTERIS) NIDUS, Linn.; Hook. l. c. 3, p. 77. *Neottopteris Nidus*, Brack. l. c. p. 175. (M. & B. 137.)

566. ASPLENIUM OBTUSATUM, Forst. Prodr. Ins. Aust. p. 80; Hook. l. c. 3, p. 96. Var. OBLIQUUM, Hook. f. Fl. Ant. p. 108, Fl. N. Zeal. 2, p. 33. *A. obliquum*, Forst. l. c.; Hook. & Arn. l. c. p. 106; Brack. l. c. p. 154. (M. & B. 169.)

566^{a}. ASPLENIUM LUCIDUM, Forst. l. c. p. 80; Hook. l. c. 3, p. 98. — It is not improbable that a form of the last species (if the two are really distinct) has been taken for this, in referring it to the Hawaiian Islands. Menzies is, so far as I know, the only authority for this habitat.

567. ASPLENIUM GEMMIFERUM, Schrad. Gott. Gel. Anz. 1818, p. 916; Hook. l. c. 3, p. 99. *Darea flaccida*, *β*. Hook. & Arn. l. c. p. 107.

568. ASPLENIUM ENATUM, Brack. l. c. p. 153, t. 21; Hook. l. c. 3, p. 106. (M. & B. 485.)

569. ASPLENIUM KAULFUSSII, H. Mann, non Schrad. *A. protensum*, Kaulf. Enum. Fil. p. 167, a. 1826 (non Schrad. a. 1818, in Gott. Gel. Anz. p. 916); Hook. l. c. 3, p. 106, adnot.; Brack. l. c. p. 153. Perhaps this is what Hooker refers to under *A. falcatum* when he credits it as "very small, whole plant not 4 inches high," to the Hawaiian Islands. — It is with some hesitation that I have altered this name, but the *protensum* of Schrader has six years the precedence of that of Kaulfuss. The species under consideration appears to be

known to very few botanists, and to be thought of somewhat doubtful existence by Hooker, l. c. p. 106. (M. & B. 571.)

570. ASPLENIUM ERECTUM, Bory; Hook. l. c. 3, p. 126, which see for synonymy. Var. PROLIFERUM, Hook. Fil. Exot. t. 72. *A. pavonicum*, Brack. l. c. p. 150. (M. & B. 186; Remy, 23.) Var. SUBPINNATIFIDUM, Hook. (M. & B. 173 pro parte, 490.)

571. ASPLENIUM RESECTUM, Smith, Ic. Ined. t. 72; Hook. & Grev. Ic. Fil. t. 114; Hook. & Arn. l. c. p. 106; Brack. l. c. p. 149; Hook. l. c. 3, p. 130. (M. & B. 168; Remy, 25.)

572. ASPLENIUM TRICHOMANES, Linn.; Hook. l. c. p. 136. *A. densum*, Brack. l. c. p. 151, t. 20. (M. & B. 257; Remy, 22.)

573. ASPLENIUM MONANTHEMUM, Linn.; Brack. l. c. p. 151, t. 20, f. 2; Hook. l. c. 3, p. 140. *A. Menziesii*, Hook. & Grev. Ic. Fil. t. 100; Brack. l. c. p. 151. (M. & B.)

574. ASPLENIUM FRAGILE, Presl, Tent. Pterid. p. 108; Hook. Ic. Pl. t. 932; Hook. l. c. 3, p. 144. *A. rhomboideum*, Brack. l. c. p. 156, t. 21, f. 2.

575. ASPLENIUM CAUDATUM, Forst. Prodr. Ins. Aust. p. 80; Hook. l. c. 3, p. 152.

576. ASPLENIUM HORRIDUM, Kaulf. Enum. Fil. p. 175; Hook. & Arn. l. c. p. 106; Brack. l. c. p. 158; Hook. l. c. 3, p. 153, t. 193. (M. & B. 158.)

577. ASPLENIUM CONTIGUUM, Kaulf. Enum. Fil. p. 175; Hook. & Arn. l. c. p. 106; Brack. l. c. p. 158; Hook. l. c. 3, p. 156, t. 194. *A. filiforme*, Kaulf. l. c.; Hook. & Arn. l. c.; Brack. l. c. In a specimen in our collection some fronds bear pinnæ but 7 lines long by 6 lines wide, while others from the same root have pinnæ 2½ inches long and but 5 lines wide. (M. & B. 156, 160, 280.)

578. ASPLENIUM FALCATUM, Lam.? A Fern, probably distinct from *A. falcatum*, which I have not been able to identify satisfactorily. (M. & B. 514.)

579. ASPLENIUM FURCATUM, Thunb. Prodr. Fl. Cap. p. 172; Brack. l. c. p. 162; Hook. l. c. 3, p. 165. (M. & B. 261; Remy, 27.)

580. ASPLENIUM NITIDUM, Sw. Syn. Fil. pp. 84, 280; Hook. l. c. p. 172; *A. cristatum*, Brack. l. c. p. 163, t. 21, f. 3? (non Wall.) *A. insiticum*, Brack. pro parte. (M. & B. 167, 191, 515.)

581. ASPLENIUM SPATHULINUM, J. Sm. in Hook. Journ. Bot. 3, p. 408; Hook. l. c. 3, p. 170. *A. insiticum*, Brack. pro parte. (M. & B. 264, 477; Remy, 31.)

582. Asplenium acuminatum, Hook. & Arn. l. c. p. 106; Brack. l. c. p. 164; Hook. l. c. 3, p. 183, t. 206. (M. & B. 494.)

583. Asplenium Adiantum-nigrum, Linn.; Hook. l. c. 3, p. 187. Var. Gaudichaudianum, Hook. l. c. 3, p. 188. *A. Adiantum-nigrum*, Brack. l. c. p. 320. *A. patens*, Gaud. Bot. Freyc. Voy. p. 320. (M. & B. 259; Remy, 36.)

584. Asplenium dissectum, Brack. l. c. p. 170, t. 24; Hook. l. c. 3, p. 189. (M. & B. 478, 572.)

585. Asplenium Macræi, Hook. & Grev. Ic. Fil. t. 217; Brack. l. c. p. 159. (M. & B. 173 pro parte, 549; Remy, 24.)

586. Asplenium strictum, Brack. l. c. p. 168, t. 23, f. 1; Hook. l. c. 3, p. 200. *A. patens*, Hook. & Arn. l. c. p. 106 (non p. 274).

587. Asplenium deparioides, Brack. l. c. p. 172.

588. Asplenium Porietianum, Gaud. Bot. Freyc. Voy. p. 327, t. 13; Brack. l. c. p. 175. (M. & B. 265.)

589. Asplenium multisectum, Brack. l. c. p. 174. (M. & B.)

590. Asplenium Sanwichianum, Metten. Asplen. p. 197. *Athyrium*, Presl, Epim. Bot.

591. Aplenium arborescens, Metten. Fil. Hort. Lips, p. 78. Perhaps the *Aspl. diplazioides*, Hook. & Arn. l. c. p. 107, will claim rank as a good species after all, as there is a Diplazioid Fern which is by no means aborescent.

592. Asplenium polypodioides, Metten, l. c. — I quote this name and the last, to represent what are probably two species of Diplazioid Ferns from the Islands, but I am not satisfied that the determinations are correct. They are numbered 166 & 172 in our collection.

593. Aspidium aculeatum, Sw.; Hook. l. c. 4, p. 18. Var. This seems never to have been collected on the Hawaiian Islands before. We found it on the Western base of Mauna Loa, in woods in Kona, Hawaii, at an elevation of 5,000 or 6,000 feet. (M. & B. 258.)

594. Aspidium Haleakalense, Brack. l. c. p. 204, t. 28 (sub *Polysticho*). I cannot at all agree with Hooker in referring this very well marked Fern to *A. aculeatum*. (M. & B. 481.)

595. Aspidium (Cyrtomium) carytoideum, Wall. Cat. n. 376; Hook. & Grev. Ic. Fil. t. 69; Hook. l. c. 4, p. 41; Brack. l. c. p. 184. (M. & B. 487.)

596. Aspidium (Sagenia) cicutarium, Sw. in Schrad. Journn. 1803, 2, p. 279; Hook. l. c. 4, p. 49. *Aspid. apiifolium*, Schk. Fil. p. 128; t. 36, B.?; Brack. l. c. p. 182. *Nephrodium apiifolium*, Hook.

& Arn. l. c. p. 313! *Aspidium sinuatum*, Gaud. Bot. Freyc. Voy. p. 343. I have specimens from 6 inches long, and nowhere truly pinnate, to others 2 or 3 feet long, and tripinnatifid or tripinnate, the segments varying much in shape. (M. & B. 184.)

597. ASPIDIUM HUDSONIANUM. *Nephrodium*, Brack. l. c. p. 189, t. 25. This is referred by Hooker, l. c. 4, p. 72, to *A. extensum*, Blume. (M. & B. 153.)

598. ASPIDIUM CYATHEOIDES. *Nephrodium*, Kaulf. Enum. Fil. p. 234; Brack. l. c. p. 189; Hook. l. c. 4, p. 76, t. 241, A. *Polystichum Dubreuillianum*, Gaud. Bot. Freyc. Voy. p. 333, t. 9. (M. & B. 152; Remy, 13.)

599. ASPIDIUM UNITUM, β HIRSUTUM, Metten. in Ann. Mus. Lugd.-Bat. 1, p. 230. *A. resiniferum*, Kaulf. *Nephr. resiniferum*, Hook. & Arn. l. c. p. 105; Brack. l. c. p. 185. *Polyst. propinquum*, Gaud. Bot. Freyc. Voy. p. 330. — It is in vain that I have tried to unravel the rest of the synonymy of this species; it however appears to be both the *N. propinquum* & *unitum* of R. Br. Prodr. p. 148, and not *N. unitum*, Sieber, in Hook. l. c. 4, p. 81. (M. & B. 269; Remy, 20, 21.)

600. ASPIDIUM PATENS, Sw. Syn. Fil. p. 49. *Nephrodium*, Hook. l. c. 4, p. 95.

601. ASPIDIUM GLOBULIFERUM. *Lastrea globulifera*, Brack. l. c. p. 194. *Nephrodium*, Hook. l. c. 4, p. 96.

602. ASPIDIUM FILIX-MAS, Sw. l. c. p. 55. *Nephrodium*, Rich.; Hook. l. c. 4, p. 116. *Lastrea truncata*, Brack. l. c. p. 195, t. 27. Var. PALEACEUM. (M. & B. 255.)

603. ASPIDIUM LATIFRONS, Brack. l. c. p. 196. *Nephrodium*, Hook. l. c. 4, p. 138. (M. & B. 189, 195, 196.)

604. ASPIDIUM RUBIGINOSUM. *Lastrea*, Brack. l. c. p. 201. *Nephrodium*, Hook. l. c. 4, p. 143. *N. Fijiense*, Hook. 2d Century of Ferns, t. 67.

605. ASPIDIUM SQUAMIGERUM. *Nephrodium*, Hook. & Arn. l. c. p. 106; Hook. l. c. 4, p. 144. *Lastrea squamigera*, Brack. l. c. p. 198. (M. & B. 505.)

606. ASPIDIUM GLABRUM, Metten. *Lastrea glabra*, Brack. l. c. p. 200. (M. & B. 266, 185 pro parte.)

607. ASPIDIUM ———? An undetermined species. (M. & B.)

608. NEPHROLEPIS EXALTATA, Schott; Hook. l. c. 4, p. 152; Brack. l. c. p. 211. *Nephrodium exaltatum*, Gaud. Bot. Freyc. Voy. p. 336. (M. & B. 142; Remy, 43.)

609. PHEGOPTERIS HONOLULENSIS. *Polypodium*, Hook. l. c. 4, p. 254 (sub nom. *Hillebrandi;* vide Hook. l. c. p. 288, adnot.)

610. PHEGOPTERIS CRINALIS. *Polypodium*, Hook. & Arn. l. c. p. 105; Brack. l. c. p. 15; Hook. l. c. 4, p. 266. (M. & B. 502.)

611. PHEGOPTERIS UNIDENTATA. *Polypodium*, Hook. & Arn. l. c. p. 105; Brack. l. c. p. 17; Hook. l. c. 4, p. 267. (M. & B. 185 pro parte, 501, 592.)

612. PHEGOPTERIS SANDWICENSIS. *Polypodium*, Hook. & Arn. l. c. p. 105; Brack. l. c. p. 17; Hook. l. c. 4, p. 267. (M. & B. 591.)

613. PHEGOPTERIS KERAUDRENIANA. *Polypodium*, Gaud. Bot. Freyc. Voy. p. 362, t. 7; Brack. l. c. p. 15; Hook. l. c. 4, p. 268. Var. β Hook. l. c. (M. & B. 278.)

614. PHEGOPTERIS PROCERA. *Polypodium*, Brack. l. c. p. 14, t. 3; Hook. l. c. 4, p. 269. — Hooker's var. β of the last species is so entirely intermediate between the simplest form of *P. Keraudreniana* and the present Fern, as to render it altogether probable that they pass into one another, as he supposes. (M. & B. 508.)

615. PHEGOPTERIS MICRODENDRON, Eaton, mss. *Polypodium Sandwicensis*, Hook. l. c. 5, p. 5 (non Hook. l. c. 4, p. 267.) *Stegnogramma Sandwicense*, Brack. l. c. p. 26. (M. & B. 476.)

616. POLYPODIUM PSEUDO-GRAMMITIS, Gaud. Bot. Freyc. Voy. 4, 345; Hook. & Arn. l. c. p. 103, t. 21, B; Brack. l. c. p. 3; Hook. l. c. 4, p. 165. (M. & B. 180.)

617. POLYPODIUM HOOKERI, Brack. l. c. p. 4; Hook. l. c. 4, p. 171. *P. setigerum*, Hook. & Arn. l. c. p, 103, t. 21, A., non Blume? (M. & B. 482.)

618. POLYPODIUM SERRULATUM, Metten. Polypod. p. 32?; Hook. l. c. 4, p. 174? *P. minimum*, Brack. l. c. p. 5, t. 1. *Xiphopteris Jamesoni*, Hook. 2d Cent. of Ferns, t. 14? — The Hawaiian Fern has a different appearance from the West Indian and South American one. (M. & B. 550.)

619. POLYPODIUM SUBPINNATIFIDUM, Blume, Enum.; Hook. l. c. 4, p. 177. *P. Haalilioanum*, Brack. l. c. p. 5. (M. & B. 178.)

620. POLYPODIUM ADENOPHORUS, Hook. & Arn. l. c. p. 104, t. 22; Brack. l. c. p. 8; Hook. l. c. 4, p. 195. *P. pendulum*, Gaud. Bot. Freyc. Voy. p. 349 (non Sw.). *Adenophorus pinnatifidus*, Gaud. l. c. p. 365. (M. & B. 283.)

621. POLYPODIUM SARMENTOSUM, Brack. l. c. p. 8, t. 2, f. 3; Hook. l. c. p. 195. (M. & B. 200.)

622. POLYPODIUM PELLUCIDUM, Kaulf. Enum. Fil. p. 101; Gaud. Bot. Freyc. Voy. p. 356; Hook. & Arn. l. c. p. 103; Hook. Ic. Pl. t. 944; Brack. l. c. p. 10; Hook. l. c. 4, p. 206. Var. BIPINNATIFIDUM; Hook. Ic. Pl. t. 495. *P. myriocarpum*, Hook. Ic. Pl. t. 84. (M. & B. 179.)

623. POLYPODIUM (ADENOPHORUS) HYMENOPHYLLOIDES, Kaulf. Enum. Fil. p. 118; Hook. l. c. 4, p. 228. *Adenophorus*, Hook. & Grev. Ic. Fil. t. 176. *A. minutus*, Gaud. Bot. Freyc. Voy. p. 365, t. 8, f. 3. (M. & B. 276.)

624. POLYPODIUM (ADENOPHORUS) TAMARISCINUM, Kaulf. Enum. Fil. p. 117; Brack. l. c. p. 12; Hook. l. c. 4, p. 228. *a. Adenophorus Tamarisci*, Hook. & Grev. Ic. Fil. t. 175. *A. bipinnatus*, Gaud. Bot. Freyc. Voy. p. 365, t. 8, f. 2; Hook. & Grev. l. c. t. 174. *β. A. tripinnatifidus*, Gaud. l. c. p. 365, t. 8, f. 1. *P. tripinnatifidum*, Brack. l. c. p. 13. (M. & B. 198; Remy, 15, 16.)

625. POLYPODIUM (ADENOPHORUS) TRIPINNATIFIDUM, Presl. *P. Hillebrandii*, Hook. l. c. 4, p. 228, t. 279, A? (M. & B. 199.)

626. POLYPODIUM (ADENOPHORUS) ABIETINUM, Eaton (sp. nov): "parvum, delicatulum, glandulis clavatis rubris conspersum, caudice paleaceo brevi repente; rhachi flexuosa subcapillacea; frondibus ovato-oblongis pinnatis; pinnis oblongis ad costam capillaceam pinnatisectis; segmentis 9–15 anguste spathulatis venulam unicam ad apicem soriferam excipientibus; soris latitudinem segmentorum multo excedentibus. — Hawaii (Brackenridge, mixed with *P. hymenophylloides*); Oahu, or trees 3,000 feet above the sea (D. D. Baldwin); Hanalei, Kauai (M. & B.). — Fronds 1–3 inches high, very delicate, apparently bipinnate, the pinnules less than a line long, and about one sixth of a line broad, the sorus near the end, and nearly three times the width of the pinnule. Perfectly distinct from *P. hymenophylloides*, and much more delicate than *P. tamariscinum*, from which its hairlike flexuous rachis will also distinguish it." *Eaton, mss.*

627. POLYPODIUM ATROPUNCTATUM, Gaud. Bot. Freyc. Voy. p. 346; Hook. & Arn. l. c. p. 103. *Pleopeltis elongata*, Kaulf. *Drynaria elongata*, Brack. l. c. p. 42. — Hooker, l. c. 5, p. 57 unites this and many other supposed species under *P. loriforme*, Wall. (M. & B. 177; Remy, 5.)

628. POLYPODIUM SPECTRUM, Kaulf. Enum. Fil. p. 94; Hook. & Arn. l. c. p. 103; Hook. l. c. 5, p. 74. *Drynaria Spectrum*, J. Sm.; Brack. l. c. p. 46. *Polypodium Thouinianum*, Gaud. Bot. Freyc. Voy. p. 345, t. 5, f. 1. (M. & B. 154.)

629. GYMNOGRAMME JAVANICA, Bl. Fil. Jav. p. 95, t. 41; Hook. l. c. 5, p. 145. *G. pilosa*, Brack. l. c. p. 22, t. 4. (M. & B. 486.)

630. VITTARIA RIGIDA, Kaulf. Enum. Fil. p. 193; Brack. l. c. p. 61; Hook. l. c. 5, p. 184. *V. plantaginea*, Hook. & Grev. Ic. Fil. t. 187; Gaud. Bot. Freyc. Voy. p. 382. (M. & B. 146.)

631. ACROSTICHUM CONFORME, Sw. Syn. Fil. p. 10 & 192, t. 1, f. 1; Hook. l. c. 5, p. 198. *A. æmulum*, Kaulf. Enum. Fil. p. 63? *Elaphoglossum æmulum*, Brack. l. c. p. 71. (M. & B. 507.)

632. ACROSTICHUM MICRADENIUM, Fée, Acrost. p. 43, t. 8, f. 1; Hook. l. c. 5, p. 216. *Elaphoglossum nitidum*, Brack. l. c. p. 70, t. 9. *Elaphoglossum pellucidum*, Gaud. Bot. Voy. Bonite, t. 79, f. 5–7? (M. & B. 544.)

633. ACROSTICHUM SQUAMOSUM, Sw. in Schrad. Journ. 1800, 2, p. 11, & Syn. Fil. p. 10; Hook. l. c. 5, p. 239. *A. splendens*, Bory, in Willd. Spec. 5, p. 104; Gaud. Bot. Freyc. Voy. p. 303; Hook. & Arn. l. c. p. 103. *A. crassifolium*, Gaud. Bot. Freyc. Voy. p. 303? *Elaphoglossum splendens*, Brack. l. c. p. 68. (M. & B. 493.)

734. ACROSTICHUM (OLFERSIA) GORGONEUM, Kaulf. Enum. Fil. p. 63 (non Bl.); Hook. l. c. 5, p. 254. *Elaphoglossum gorgoneum*, Brack. l. c. p. 74. (M. & B. 286.)

635. ACROSTICHUM (CHRYSODIUM) RETICULATUM, Kaulf. Enum. Fil. p. 64; Brack. l. c. p. 81; Hook. l. c. 5, p. 267. *Elaphoglossum reticulatum*, Gaud. Bot. Voy. Bonite, t. 79, f. 1–4. (M. & B. 182.)

636. HYMENOPHYLLUM RECURVUM, Gaud. Bot. Freyc. Voy. p. 376; Hook. & Arn. l. c. p. 109; Hook. l. c. 1, p. 104, t. 37, C; Brack. l. c. p. 269. (M. & B.)

637. HYMENOPHYLLUM LANCEOLATUM, Hook. & Arn. l. c. p. 109; Hook. l. c. 1, p. 94, t. 34, B; Brack. l. c. p. 263. (M. & B. 551.)

638. HYMENOPHYLLUM OBTUSUM, Hook. & Arn. l. c. p. 109; Hook. l. c. 1, p. 93, t. 33, D; Brack. l. c. p. 263. (M. & B. 281.)

639. TRICHOMANES PARVULUM, Poir. ex Kaulf. Enum. Fil. p. 260, fide Brack. l. c. p. 250. *T. saxifragoides*, Presl? (M. & B. 548.)

640. TRICHOMANES RADICANS, Sw. Syn. Fil. p. 143?; Hook. l. c. 1, p. 125?; Brack. l. c. p. 254? *T. Sandwicense*, v. d. Bosch. (M. & B. 164.)

641. TRICHOMANES MEIFOLIUM, Bory, in Willd. Spec. 5, p. 509; Hook. l. c. 1, p. 137; Brack. l. c. p. 259. (M. & B. 275.)

642. TRICHOMANES DRAYTONIANUM, Brack. l. c. p. 252, t. 36. (M. & B.; Remy, 53.)

643. TRICHOMANES ———? An apparently undescribed species, but not fruiting, and therefore the genus doubtful. (M. & B. 545.)

644. OPHIOGLOSSUM ELLIPTICUM, Hook. & Grev. Ic. Fil. t. 40, A; Hook. Bot. Misc. 3, p. 217; Brack. l. c. p. 314.

645. OPHIOGLOSSUM CONCINNUM, Brack. l. c. p. 315, t. 44.

646. OPHIOGLOSSUM PENDULUM, Linn. ex Sw. Syn. Fil. p. 170; Hook. & Arn. l. c. p. 102; Brack. l. c. p. 316. (M. & B. 139; Remy, 60.)

647. BOTRYCHIUM SUBBIFOLIATUM, Brack. l. c. p. 317, t. 44. (H. Mann.)

648. MARATTIA ALATA, Sw. Syn. Fil. p. 168; Hook. & Arn. l. c. p. 102; Brack. l. c. p. 311. *Stibasia Douglasii*, Presl, Suppl. Tent. Pterid. p. 16. (M. & B. 271; Remy, 57.)

649. SCHIZÆA AUSTRALIS, Gaud. Bot. Freyc. Voy. p. 296; Brack. l. c. p. 302. *S. palmata*, Montagne, Bot. Voy. Astrol. & Zelee, t. 4. f. Z. sine descr. (M. & B. 475.)

Lycopodiaceæ.

650. PSILOTUM TRIQUETRUM, Sw. Syn. Fil. p. 187; Hook. & Arn. Bot. Beech. Voy. p. 102; Brack. Fil. U. S. S. Pacif. Expl. Exp. p. 319; Spring, in Mem. Acad. Brux. 24, p. 269. *Bernhardia dichotoma*, Willd.; Gaud. Bot. Freyc. Voy. p. 290. (M. & B. 140; Remy, 65.)

651. PSILOTUM COMPLANATUM, Sw. l. c. p. 188 & 414, t. 4, f. 5; Spring, l. c. p. 271; Brack. l. c. p. 319; Hook. & Arn. l. c. p. 102. *Bernhardia complanata*, Willd. (M. & B.)

652. LYCOPODIUM POLYTRICHOIDES, Kaulf. Enum. Fil. p. 6; Spring, l. c. p. 32, & 15, p. 73. Brack. l. c. p. 323. *L. verticillatum*, Spring, l. c. 15, p. 46 (pro Ins. Haw.). (M. & B. 549.)

653. LYCOPODIUM VARIUM, Hook. fil. Bot. Ant. Voy. p. 115 (ex parte); Spring, l. c. 24, p. 24, non Spring, l. c. 15, p. 57. *L. sulcinervium*, Brack. l. c. p. 322; Spring, l. c. 15, p. 39. (M. & B. 147; Remy, 73.)

654. LYCOPODIUM PACHYSTACHYON, Spring, in Gaud. Bot. Voy. Bonite, t. 34; Spr. in Mem. Acad. Brux. 15, p. 66, and 24, p. 29; Brack. l. c. p. 326. *L. phyllanthon*, Hook. and Arn. l. c. p. 102; Spring, l. c. 15, p. 73. (M. & B. 135.)

655. LYCOPODIUM NUTANS, Brack. l. c. p. 327. (M. & B. 150.)

656. LYCOPODIUM PHLEGMARIA, Linn., var., or perhaps a distinct species, as it differs in a few particulars. (M. & B. 506.)

657. Lycopodium fastigiatum, R. Br. Prodr. 1, p. 163; Spring, l. c. 15, p. 88, & 24, p. 41. *L. heterophyllum*, Hook. & Grev. Ic. Fil. t. 113 (non Willd.); Spr. l. c. 15, p. 88; Brack. l. c. p. 330.

658. Lycopodium venustulum, Gaud. Bot. Freyc. Voy. p. 285, t. 22; Spring, l. c. 15, p. 84; Brack. l. c. p. 329.

659. Lycopodium cernuum, Linn.; Spring, l. c. 15, p. 79, & 24, p. 37. *L. curvatum*, Bl. Enum. Pl. Jav. 2, p. 266; Gaud. Bot. Freyc. Voy. p. 284 (non. Sw.); Brack. l. c. p. 325 (non. Sw.). (M. & B. 176; Remy, 68.)

660. Lycopodium Haleakalæ, Brack. l. c. p. 321, t. 45.

661. Lycopodium erubescens, Brack. l. c. p. 320, t. 45.

662. Lycopodium volubile, Forst. Prodr. Ins. Aust. p. 86, n. 482; Spring, l. c. 15, p. 105, & 24, p. 49.

663. Selaginella arbuscula, Spring, l. c. 24, p. 183; Brack. l. c. p. 332. *Lycopodium Arbuscula*, Kaulf. Enum. Fil. p. 19; Gaud. Bot. Freyc. Voy. p. 288; Hook. & Arn. l. c. p. 102. (M. & B. 174.)

664. Selaginella Springii, Gaud. Bot. Voy. Bonite, t. 12; Spring, l. c. 24, p. 184.

665. Selaginella Menziesii, Spring, l. c. 24, p. 185. *Lycopodium Menziesii*, Hook. & Grev. Enum. Fil. n. 131; Hook. & Arn. l. c. p. 102; Brack. l. c. p. 333. *Lycopodium Arbuscula*, Hook. & Grev. Icon. Fil. t. 200, non Kaulf. (M. & B. 175.)

666. Selaginella deflexa, Brack. l. c. p. 332, t. 45. (M. & B. 474.)

Hydropterides.

667. Marsilea villosa, Kaulf. Enum. Fil. p. 272; Brack. l. c. p. 341. *M. vestita*, Hook. & Grev. Ic. Fil. t. 159. *M. quadrifolia*, Gaud. Bot. Freyc. Voy. p. 406. *M. hirsuta*, R. Br. Prodr. p. 167? (Remy, 63.)

The Mosses and Hepaticæ may form the subject of some future communication.

Lichenes.* (By Edw. Tuckerman.)

Trib. I. Parmeliacei, Fr.

Fam. 1. *Usneei.*

Siphula Pickeringii, Tuckerm. (Bot. U. S. S. Pacif. Expl. Exp.) Appears scarcely referable to *S. torulosa* (Thunb.) to which Nylander (Lich. exot.) has referred it; but possibly to *S. pteruloides*, Nyl. l. c., a Peruvian Lichen. — On the earth, among mosses, Oahu (Pickering), Tuck. l. c.

Ramalina Manni (sp. nov.): thallo subfoliaceo depresso lacero-laciniato glauco, subtus nigricante, laciniis lacunosis margine eroso-denticulatis, fertilibus suberectis; apotheciis podicellatis margine evanido. Sporæ octonæ in thecis, parvæ, diblastæ, curvulæ, diam. 2 – 2½ plo longiores, incolores. — Trunks, Makawao, East Maui (Mann). — Exhibits a close approach to the foliaceous thallus of *Cetraria;* and the depressed habit and differently-colored sides are new to the present genus, with which it is none the less associated by the characters of fructification. The rather short, lacunose, and, especially when fertile, ascendant lobes are about one quarter of an inch in diameter; the apothecia reach the same size. Spores .013 – .014$^{\text{mm}}$ long.

Ramalina lævigata, Fr. — Trunks, Mountains of Kauai (Mann).

Ramalina calicaris (L.) Fr., var. fraxinea, Fr. —Trunks, Oahu (Mann). Var. farinacea, Schær.? *R. complanata*, Ach.? — Hawaii (Pickering), Tuck. l. c. Var. inflata. *R. inflata*, Hook. — Trees, Kaala Mountains, Oahu (Mann).

Usnea barbata (L.) Fr., var. florida. Fr. — Trunks, Hawaiian Islands, Nyl., Tuck.; as also in the form microcarpa (Pers., e Gaudichaud) Nyl. l. c.; (Mann.) Var. HIRTA f. RUBIGINEA.—Trees, Mountains of Kauai (Mann). Var. CERATINA, Schær.—Trunks, Hawaiian Islands (Remy), Nyl. l. c.

---

* The list is meant to include all that is known of the Lichen-Flora of the Islands. This makes part only of a larger Flora, the limits of which are scarcely settled; and is not to be understood without constant reference to what has been determined of the latter. Montagne and Jardin have illustrated portions of the wider field; and Dr. Nylander has combined their results with important ones of his own, in his *Lichenes Polynesienses*, which makes the second part of his *Lichenes exotici* (Ann. Sci. Nat. 4, 11). Besides this enumeration, reference is made in what follows to the list of Lichens (prepared by the present writer) in the Botany of the U. S. S. Pacif. Expl. Exp. It is scarcely to be doubted that other Lichens, cited as Polynesian, have been determined by European Lichenists in specimens from the Sandwich Islands, and among these some of those here credited to Mr. Mann may well occur: but the catalogue will still show how large a proportion of our knowledge, especially in the crustaceous groups, is due entirely to his researches; — directed, as these were, by previous study of North American Lichens.

Fam. 2. *Parmeliei.*

THELOSCHISTES CHRYSOPHTHALMUS, var. FLAVICANS, Wallr.—Oahu & Hawaii (Pickering), Tuck. l. c.; mountains of Kauai and Maui (Mann).

PARMELIA PERLATA (L.) Ach., var. OLIVETORUM, Ach.—Hawaiian Islands (Hillebrand). Var. CILIATA, Schær.—Hawaiian Islands, Nyl. l. c.; (Mann).

PARMELIA PERFORATA (Jacq.) Ach.—Oahu (Meyen), Herb. Berol. Hawaii (Pickering), Tuck. l. c.; (Mann).

PARMELIA LÆVIGATA (Sm.) Ach.—Trunks, Hawaii (Pickering), Tuck. l. c.; Waialua Mountains, Oahu (Mann).

PARMELIA CERVICORNIS, Tuck.—Trunks, Hawaii (Pickering), Tuck. l. c.; East Maui, 7,000 feet alt. (Mann).

PARMELIA TILIACEA (Ehrh.) Floerk.—A fragment perhaps referable here.—Oahu (Mann).

PARMELIA PERTUSA (Schrank.) Schær.—Hawaiian Islands; Nyl. l. c.—Oahu (Mann).

PARMELIA CAPERATA (L.) Ach.—Hawaiian Islands (Remy), Nyl. l. c.; Mouna Kea, Hawaii (Pickering), Tuck. l. c.

PARMELIA CONSPERSA (Ehrh.) Ach.—Rocks, East Maui and Mauna Kea, Hawaii (Pickering), Tuck. l. c.; Hualalai, Hawaii, 6,000 feet alt. (Mann).

PHYSCIA SPECIOSA (Wulf., Fr.) var. HYPOLEUCA, Ach. f. HYPOMELA.—Trees, mountain of West Maui (Mann). Var. OBESA. *P. obesa* (Pers.) Nyl. *P. papulosa,* Mont.—Mountain of West Maui (Mann). Var. LEUCOMELA, Eschw.—Hawaii (Pickering), Tuck. l. c.; (Hillebrand).

PHYSCIA STELLARIS (L.) var. ASTROIDEA, Tuck., forma.—Lava, Oahu (Mann).

PHYSCIA PICTA (Sw.) Nyl.—Trunks, common (Mann).

PYXINE COCOES (Sw.) Nyl.—Trunks, Oahu (Mann).

Fam. 3. *Umbilicariei.*

UMBILICARIA VELLEA (L.) Fr., *e habitu.*—Rocks, region of *Sophora,* Mauna Loa, Hawaii, infertile (Pickering), Tuck. l. c.

Fam. 4. *Peltigerei.*

STICTA CRENULATA (Hook.) Del. — Trunks, Hawaiian Islands (Gaud.), Nyl. l. c.; West Maui and other islands, abundant (Mann).

STICTA ORYGMÆA, Ach. *S. flavicans* Tayl. *S. Durvillei*, var. *flavicans*, Nyl. — Trees, mountain of West Maui (Mann).

STICTA AURATA (Sm.) Ach. — Trees, Oahu (Mann).

STICTA MOUGEOTIANA, Del., Nyl. — Hawaiian Islands (Gaud.), Nyl. l. c.

STICTA CROCATA (L.) Ach. — Walls of crater, East Maui and Hawaii (Pickering), Tuck. l. c.; mountain of West Maui, fertile (Mann).

STICTA ARGYRACEA (Bor.) Del., Nyl. — Oahu (Mann).

STICTA QUERCIZANS (Michx.) Ach., Nyl. — Near Hilo, Hawaii (Pickering), Tuck. l. c.; Oahu (Mann). Var LUTESCENS, Nyl. — Hawaiian Islands (Gaud.), Nyl. l. c.; Oahu (Mann).

STICTA AMBAVILLARIA (Bor.) Del. — Hawaiian Islands (Remy), Nyl. l. c.; Hawaii, Oahu, and West Maui, 3,000 - 5,000 feet alt. (Mann).

STICTA FILIX (Sw.) *S. filicina*, Ach. — Oahu (Mann).

NEPHROMA TOMENTOSUM (Hoffm.) Koerb., var. HELVETICUM, Fr. — Trunks, Oahu, and mountain of West Maui (Mann).

NEPHROMA LÆVIGATUM, Ach., var. RUFUM, Babingt. — Trunks, Oahu (Mann).

PELTIGERA RUFESCENS, Hoffm. — Hawaiian Islands (Remy), Nyl. l. c. Walls of crater, East Maui (Pickering), Tuck. l. c.; Hawaii (Mann).

PELTIGERA POLYDACTYLA, Hoffm. — Hawaiian Islands (Remy), Nyl. l. c.; Hawaii, and Kaala Mountains, Oahu (Pickering), Tuck. l. c.; Oahu (Mann).

ERIODERMA UNGUIGERUM (Bor.) Nyl. — Trees, Oahu (Mann).

Fam. 5. *Pannariei.*

PANNARIA MOLYBDÆA (Pers.) *Coccocarpia parmelioides*, Tuck. in Wright, Lich. Cub. — Trees, Oahu (Mann).

PANNARIA LURIDA (Mont.) Nyl. — Trees, Hawaiian Islands (Gaud.), Mont. Bot. Voy. Bonite (Mann). Var. HYPOMELA. — Hawaiian Islands (Hillebrand; Mann).

PANNARIA PANNOSA (Sw.) Del. — Trees, Hawaiian Islands (Gaud.), Nyl. l. c. (Hillebrand). Common on trunks at low and medium altitudes (Mann).

PANNARIA RUBIGINOSA (Thunb.) Del. — Hawaii (Pickering), Tuck. l. c.; on the earth, summit of Hualalai, Hawaii, 8,000 feet alt., and on trunks (Mann).

PANNARIA NIGROCINCTA (Mont.) Nyl. — Oahu (Mann).

Fam. 6. *Lecanorei.*

DIRINA REPANDA (Fr.) Nyl. — On lava, Oahu (Mann).

PLACODIUM CINNABARINUM (Ach.) Anz. — On lava, Oahu (Mann).

PLACODIUM AURANTIACUM (Lightf.) Næg. & Hepp. — Hawaiian Islands (Remy), Nyl. l. c.

PLACODIUM ALBIDELLUM (sp. nov.): thallo areolato-verruculoso glaucescente; apotheciis minutis sessilibus demum lutescentibus, disco plano pulverulento, margine obtuso. Sporæ octonæ in thecis, mediocres, polari-diblastæ, diam. 2-3 plo longiores, incolores. — On lava, Oahu (Mann). — The rather obscure yellowish tinge at length observable in the simple exciple is the only external feature associating this Lichen with the group to which its spores refer it.

PLACODIUM BREBISSONII (Fée, sub *Lecidea*). *Lecanora*, Nyl. — Hawaiian Islands (Remy), Nyl. l. c.

PLACODIUM SPADICEUM (sp. nov.): thalli granulis mox isidiomorpho-elongatis adscendentibus ramulosis dein stipatis cinereo-fuscescentibus; apotheciis mediocribus biatorinis sessilibus, disco plano castaneo nudo, margine tenui elevato pallidiori subintegro, thallino obsolescente. Sporæ octonæ in thecis, mediocres, ellipsoideæ, polari-tetrablastæ, diam. 2-3 plo longiores. — Trunks, Oahu (Mann). — Agrees with the last species in exhibiting the highest known modification of its type of spore, but differs remarkably in the isidioid evolution of its thallus, and in the colors. The North American *P. camptidium* is perhaps best comparable in the latter respect.

LECANORA PALLESCENS (L.) Schær. — Trunks, Oahu (Mann).

LECANORA GLAUCOMA, Ach. — Volcanic rocks, Oahu (Mann).

LECANORA SUBFUSCA (L.) Ach. — Oahu (Mann).

LECANORA GRANIFERA, Ach. — Trunks, Oahu (Mann).

LECANORA PUNICEA, Ach. — Trunks, Oahu (Mann).

RINODINA SOPHODES (Ach.) — Volcanic rocks, Oahu (Mann).

RINODINA MAMILLANA (sp. nov.): thallo subtartareo rimoso-areolato pallide stramineo, hypothallo nigricante; apotheciis minutis sessilibus lecanorinis, margine obtuso mox fusco-nigricante, disco concolore papillato, demum rugoso-plicatis. Sporæ octonæ in thecis, parvæ, obtusissime ellipsoideæ, diblastæ, diam. subduplo longiores, fuscæ.—Volcanic rocks, Oahu (Mann). — Apothecia at length rather elevated, and curiously contorted; illustrating, both in this respect and in their decoloration, those of *Umbilicaria.*

PERTUSARIA VELATA (Turn.) Nyl. Scand., the states resembling Lindig, Lich. N. Gran. n. 2,658. — Trees, Waialua Mountains, Oahu (Mann).

PERTUSARIA WULFENII, DC. — Volcanic rocks, Oahu (Mann).

PERTUSARIA LEIOPLACA (Ach.) Schær. — Trunks, Oahu (Mann).

GYALECTA LUTEA (Dicks.) Tuck. — Hawaiian Islands (Remy), Nyl. l. c.; Oahu, Lanai (Mann).

URCEOLARIA CINEREO-CÆSIA (Sw.) Ach. — On the earth, Kaala Mountains, Oahu (Mann).

URCEOLARIA ACTINOSTOMA, Pers. — Volcanic rocks, Oahu (Mann).

THELOTREMA CALVESCENS, Fée. — Trunks, Oahu (Mann).

THELOTREMA TEREBRATUM, Ach. — Trees, Oahu (Mann).

THELOTREMA CAVATUM, Ach., Nyl., var. — Trunks, Oahu (Mann).

THELOTREMA PILULIFERUM (sub-sp. nov.): thallo subtartareo contiguo l. æquabili l. verruculoso glaucescente albidove cum hypothallo confuso; apotheciis confertis superficialibus globularibus subclausis, excipulo exteriori apice poro pertuso proprium integrum fuscum fovente, disco concavo pallido. Sporæ octonæ, cocciformes, muriformes (ser. transv. dein 6, long. 2 – 3) diam. subduplo longiores, incolores. — Trees, Oahu (Mann). — With quite the aspect, in some of the specimens, of a *Pertusaria,* not remote from conditions of *P. velata.* The Lichen is evidently closely allied to *Thelotrema pachystomum,* Nyl. (Wright, Lich. Cub. n. 131; Lindig, herb. N. Gran. n. 55, 88, coll. 2^{dae}) from which it especially differs in its cocciform, muriform-plurilocular spores; the spores of the other being regularly quadilocular, and affording no indications of ulterior development. But both alike of these decolorate spore-forms belong, we believe, to the colored type; and in fact one of them expresses what is exactly the younger condition of the other. The discrepancy in shape and in the measurements between the spores of the Oahu Lichen, and those of the West Indian and South American ones appears to be due entirely to the *distention* which so commonly accompanies the evolution of the muriform stage.

It appears therefore likely, the general agreement between these plants being undeniable, that they express only conditions of the same species.

THELOTREMA LEUCOMELANUM, Nyl. — Trunks, Oahu (Mann).

THELOTREMA BAHIANUM, Ach. — Trunks, mountain of West Maui, and Oahu (Mann).

THELOTREMA AUBERIANUM, Mont. — Trunks, Oahu (Mann).

THELOTREMA LEPADODES, Tuck. — Trees, Oahu (Mann.)

Trib. II. Lecideacei, Fr.

Fam. 1. *Cladoniei.*

STEREOCAULON RAMULOSUM (Sw.) Ach., f. PROXIMUM. *S. proximum,* Nyl. — Walls of crater, East Maui (Pickering), Tuck. l. c.; Kaala Mountains, Oahu (Mann). — The greater or less elongation of the nodules in the gonimous layer of the cephalodia scarcely affords a satisfactory difference.

STEREOCAULON MIXTUM, Nyl. — Hawaiian Islands (Gaud.), Nyl. l. c.; mountains of Oahu (Andersson), Th. Fr. — The series of forms, — including the East Indian *S. piluliferum,* Th. Fr., the oldest and most significant name, — brought together here by Dr. Nylander, has been shown by him to be marked by a curious difference in the structure of the gonimous layer of the cephalodia. In other respects there is little to distinguish these forms from *S. ramulosum;* and even the dwarfed and otherwise noticeable lichen of the Himmalayah (Herb. Hook.; Hook. & Thoms. herb. Ind. Or.) well compares with a similarly small condition (Oahu, Mann; comp. *S. claviceps,* Th. Fr., Nyl.) of the latter.

STEREOCAULON PILOPHOROIDES, Tuck. — Hawaiian Islands (Hillebrand).

CLADONIA PYXIDATA (L.) Fr. — East Maui (Pickering), Tuck. l. c.

CLADONIA GRACILIS, var. ELONGATA, Fr. — Mauna Loa, Hawaii (Pickering), Tuck. l. c.

CLADONIA FIMBRIATA (L.) Hoffm. — Hawaii (Pickering), Tuck. l. c. Var. ADSPERSA, Tuck. — Hawaii (Mann).

CLADONIA FURCATA (Schreb.) Fr. — Hawaii (Pickering), Tuck. l. c.; Waialua Mountains, Oahu (Mann).

CLADONIA SQUAMOSA, Hoffm. — Hawaii (Pickering), Tuck. l. c.

CLADONIA RANGIFERINA (L.) Hoffm. — Hawaiian Islands, Nyl.; Mauna Loa, Hawaii, and Kaala Mountains, Oahu (Pickering), Tuck. l. c.; Mountain of West Maui, etc. (Mann).

Cladonia angustata, Nyl. — Hawaiian Islands (Remy), Nyl. l. c.; Hawaii and Lanai (Mann).

Cladonia macilenta (Ehrh.) Hoffm. — Hawaiian Islands, Montagne; Mountain of West Maui (Mann).

Cladonia muscigena, Eschw. — Hawaiian Islands (Remy), Nyl. l. c.; Hawaii (Pickering), Tuck. l. c.; West Maui (Mann).

Fam. 2. *Lecideei.*

Bæomyces fungoides (Sw.) Ach. — Mountain of West Maui, on the earth (Mann).

Biatora aurigera (Fée). — Trunks, Oahu (Mann).

Biatora cyrtelloides (Nyl.) — Hawaii (Remy), Nyl. l. c.

Biatora triseptata (Hepp.) Mont. & v. d. Bosch. — On the earth, Mountain of West Maui (Mann).

Biatora rubella (Ehrh.) Rabenh., var. (*spadiceæ, aff.*) — Trunks, Waialua Mountains, Oahu (Mann). Var. incompta, Nyl. — Hawaiian Islands, Nyl. l. c.

Heterothecium Taitense, Mont. — Trunks, Oahu, and West Maui, very common (Mann).

Heterothecium Domingense (Pers.) *H. gyrosum*, Flot. — Trunks, Oahu (Mann).

Heterothecium leucoxanthum (Spreng.) *H. tricolor*, Flot., Mont. — Hawaiian Islands, Nyl.; Oahu, and East Maui (Mann).

Lecidea trachonoides, Nyl. Lich. N. Caled., *e descr.* — Trunks, Mountain of West Maui, and Oahu (Mann).

Buellia parasema (Ach.) Koerb. — Mountain of West Maui (Mann). Var. œruginascens, Nyl. — Trees, Oahu (Mann). — Var. endococcina, Tuck. — With the last (Mann).

Buellia atroalba (Ach., Flot.) Th. Fr. — Volcanic rocks, Oahu (Mann).

Trib. III. Graphidacei, Eschw., Fr., Nyl.

Fam. 1. *Lecanactidei.*

Lecanactis premnea (Ach.) Tuck. — Trunks, Waialua Mountains, Oahu (Mann).

Fam. 2. *Opegraphei.*

Opegrapha subcentrifuga, Nyl. — Trunks, Hawaii (Remy), Nyl. l. c.

OPEGRAPHA ATRA, Pers. — Trees, Hawaii (Remy), Nyl. l. c.; Oahu (Mann).

OPEGRAPHA LENTIGINOSA, Lyell. — Trees, Oahu (Mann).

GRAPHIS SCRIPTA (L.) Ach., *emend.* — Trees, Oahu (Mann). — Var. ASSIMILIS. *G. assimilis*, Nyl. — Oahu (Mann).

GRAPHIS DISCURRENS, Nyl., var. KAALENSIS: apotheciis crassioribus dendritico-ramosis; sporis (octonis) majoribus 8-blastis. — Trunks, Kaala Mountains, Oahu (Mann). — A larger plant than the Lichen (Hong Kong, Wright) described by Nylander, and with rather the aspect of conditions of *G. vernicosa*, Fée.

GRAPHIS ELEGANS (Sw.) Ach. f. STRIATULA. *G. striatula*, (Ach.) Nyl. — Trunks, Oahu (Mann). Var. SUBSTRIATULA. *G. substriatula*, Nyl. — With the last (Mann).

GRAPHIS RIGIDA (Fée) Nyl. — Trees, Oahu (Mann).

GRAPHIS FULGURATA, Fée, *e descr.* — Trees, Oahu (Mann). — Small, with a little of the aspect of *G. discurrens*, *a*, the colored spores of which species also look towards the section represented by *G. dendritica;* but approaching more evidently to the latter, with which it was arranged by Fée, in its open disk.

GRAPHIS DENDRITICA, Ach., *excip integro.* — Trees, Waialua Mountains, Oahu; and Hawaii (Mann). Var. INUSTA. *G. inusta*, Ach., Nyl. — With the last, Oahu (Mann). Var. LEUCOCHEILA. *G. leucocheilæ* (Fée) Nyl. *prox. accedens.* — Trees, Kaala Mountains, Oahu (Mann). — The Oahu Lichen last named has the habit of large forms of *G. scalpturata*, Ach., in which the thalline margin is conspicuous (Lindig, Lich. N. Gran. n. 54, coll. 2^{dae}) but the spores of *G. dendritica;* differenced here, as commonly in the Carolina Lichen, by an occasional passage of one or more of the sporoblasts into two, — the beginning of the muriform-multilocular stage. And it certainly suggests that *G. scalpturata* (compare especially the specimen of this in Lindig's n. 752 with that of *G. dendritica* in n. 2,563 of the same collection) is only a condition (the ultimate one as respects sporal development) of *G. dendritica;* analogous to *G. scripta*, var. *sophistica.* (*G. sophistica*, Nyl.)

GRAPHIS PATELLULA (Meissn.) Nyl. *in litt.* *Opegrapha*, Meissn. in Fée Suppl., *Lecanactis*, Nyl. Enum. Var. PATERELLA. *Lecanactis*, Tuck. *in litt.* — Trees, Oahu (Mann). — Spores (as in the Carolina Lichen) 8 - 10-locular. Those of Fée's Lichen are described by him as 15 - 18-locular.

GRAPHIS FRUMENTARIA, Fée, var. CHLOROCARPA, Nyl. *G. chlorocarpa*, Fée. — Trunks, Oahu (Mann).

GRAPHIS TUMULATA, Nyl., *e descr.* — Trunks, Oahu (Mann). — Spores brown, cocciform, submuriform (transverse series of sporoblasts four; longitudinal, one to three), as described in the cited species, from New Caledonia.

GRAPHIS OSCITANS (sp. nov.): thallo tenui contiguo æquabili albo; apotheciis innato-prominulis simplicibus subramosisve flexuosis, marginibus excipuli profunde canaliculati nigricantis tenuibus, dein hiantibus nudis, cum thallino crassiusculo concretis, hypothecio incolore. Sporæ octonæ in thecis, mediocres, oblongæ, submuriformes (ser. tr. 6–8, long. 1–2) diam 3–3½ plo longiores, fuscescentes. — Trunks, Oahu (Mann). — With the aspect of the closed apothecia of *G. dimorpha*, Nyl., and agreeing in size; but not assuming the habit of *G. dendritica;* and better comparable with species of the present group.

GRAPHIS GRAMMITIS, Fée. — Trunks, Waimea, Kauai, and mountain of West Maui (Mann). — One of the sporoblasts now divided into two; an indication of the true type of this decolorate spore.

GRAPHIS RADIATA, Nyl. — Trees, Oahu (Mann). — One of the specimens resembling *Fissurina nitida*, M. and v. d. Bosch. *Lich. Jav.*, which I take to be the Java *Gr. radiata* of Nyl. *Enum.*, — the first named authors not having had the advantage of comparing the Lichen with Eschweiler's *Diorygma nitidum;* — and the other smaller, and more like *G. radiata* as published in Lindig's New Granada Lichens. The spores of the forms named scarcely differ. There is still another of these debased types of *Graphis* (Oahu; Mann) intermediate in the size of the apothecia between the coarser and slenderer forms just noticed, but otherwise similar, which is remarkably differenced by the colored (cocciform and regularly quadrilocular) spores; suggesting *G. heterospora*, Nyl., of Bourbon: the only described instance of coloration in the present section (*Fissurina*).

Fam. 3. *Glyphidei.*

CHIODECTON PERPLEXUM, Nyl. — Trees, Kaala and Waialua Mountains, Oahu (Mann).

GLYPHIS HETEROCLITA, Mont. — Trees, Kaala and Waialua Mountains, Oahu (Mann).

GLYPHIS ACHARIANA, Tuck. Suppl. 1858. *G. cicatricosa* and *G. favulosa*, Ach., and *G. confluens*, Mont. — Trunks, Oahu (Mann).

Fam. 4. *Arthoniei.*

ARTHONIA CINNABARINA (DC.) Wallr.; var. ADSPERSA, Nyl. — Trunks, Hawaiian Islands (Remy), Nyl. l. c.

ARTHONIA CARIBÆA (Ach.) Nyl., forma. — Trees, Oahu (Mann).

ARTHONIA INTERDUCTA, Nyl. — Trees, Oahu (Mann). — Spores 5–7-locular, but all the narrower sporoblasts broken (in these specimens constantly, so far as observed) into smaller ones, and the spores becoming thus submuriform-multilocular; the large terminal sporoblasts remaining entire.

ARTHONIA PLATYGRAPHIDEA, Nyl., *e descr.* — Trees, Oahu (Mann). — Answering well to the described Mexican lichen, and remarkable for its fusiform, 12–15-locular spores in oblong sporesacks, like those of some *Opegrapha.*

ARTHONIA ASTROIDEA, var. SWARTZIANA, Nyl. — Trees, Hawaii (Remy), Nyl. l. c.

Trib. IV. Caliciacei.

ACOLIUM PROTRUDENS. *Tylophoron,* Nyl. — Trunks, Waialua Mountains, Oahu (Mann). — The separation of this type, as of the Californian saxicoline species, from *Acolium,* on account of the distinct, excipular relation of the thallus to the proper exciple, appears to be precluded by the structure, as well of other recognized members of the group (as *A. ocellatum* (Flot.) Koerb.) as especially of *A. tigillare.* These new forms may then be regarded as affording only a better exhibition of the highest view of the generic type, as suggested by the older ones. And ennobled thus, as by the lobulate thallus of *A. Californicum,* the present genus may claim perhaps no uncertain place in the closest affinity to the fruticulose *Acroscyphus.* The Hawaiian specimens agree best with *Tylophoron protrudens,* Nyl., as exhibited in Lindig's N. Granada Lichens, the apothecia being larger than in the *T. moderatum* of the same work; but the latter (Lindig, herb. n. 2,653, 2,891, and 38, coll. 2^{dae}) is clearly inseparable, in my view, from the former. In 2,891 (*T. moderatum*) the spores also are smaller than in 2,633 (*T. protrudens*), but in no. 38 though the apothecia are reduced, the spores cease to afford any available difference.

ACOLIUM HAWAIENSE (sp. nov.): thallo tenuissimo glaucescente cum hypothallo albido confuso; apotheciis mediocribus elevatis lecanoroideo-depressisve, excipulo proprio in thallode crasso margine radiato-rugoso immerso, disco plano purpureo-nigro immarginato. Sporæ octonæ in thecis, minutæ, obtusissime ellipsoideæ, diblastæ, fuscæ. — Trunks, Waialua Mountains, Oahu (Mann). — The interior exciple (white, inner layer of the hypothecium) appears often (as more or less observable also in *A. protrudens*) externally, making a membranaceous, lacerate-denticulate border to the disk; or once again, as in *Thelotrema*, this border disappears, and is represented by a white, powdery, at length irregularly cracked *veil* which conceals the here concave disk. Proper exciple pale, so far as observed, immersed in a thalline wart, the thick border of which is, more or less distinctly, radiately cleft, or striate. Apothecium reaching a line in diameter. Spores averaging only one third of the size of the largest ones of the preceding species, or in length scarcely more than .006^{mm}; those of the Hawaiian *A. protrudens* exceeding, at length, .018^{mm}.

ACOLIUM JAVANICUM (Mont. and v. d. Bosch) Stizenb. — Trunks, Oahu (Mann).

CALICIUM TUBÆFORME (Mass.) *Sphinctrina*, Mass. *S. microcephala*, Nyl. — On thallus of *Pertusaria* sp., Oahu (Mann).

Trib. V. Verrucariacei (Fr. 1821, Fée), Stizenb.

Fam. 1. *Endocarpei.*

NORMANDINA JUNGERMANNIÆ (Del.) Nyl. — Growing on *Sticta crenulata* in the mountains of West Maui, and on *Pannaria molybdæa* in Oahu (Mann).

Fam. 2. *Verrucariei.*

TRYPETHELIUM PALLESCENS, Fée, Nyl. — Trees, Waialua Mountains, Oahu (Mann).

PYRENULA PLANIUSCULA. *Verrucaria*, Nyl., *e descr.* — Trees, Oahu (Mann). — Not unlike *V. insulata*, Fée (*determ.* Nyl.), but with spores of twice the dimensions.

PYRENULA CINCHONÆ (Ach. *e* Nyl. N. Gran.) *Verr. prostans*, Mont. — Trees, Oahu (Mann). — Specimens also occur from the same region, belonging apparently to the little cluster of forms which Dr. Nylander (under his *Verr. subprostans*, Pyrenoc. p. 56) has regarded as possibly reducible to a single species. In the size of the spores these specimens approach rather to *V. subprostans*, but in shape to *V.*

viridiseda, Nyl. The whole cluster approaches very closely, it should seem, to *P. Cinchonæ*.

PYRENULA PLANORBIS (Ach.) — Trees, Waialua Mountains, Oahu (Mann).

PYRENULA DILUTA (Fée). — Trees, Oahu (Mann).

PYRENULA NITIDA, Ach. var. NITIDELLA, Floerk. — Trunks, Oahu (Mann). — A Lichen also occurs with a white crust, but otherwise allied to this, which I take for *P. Cinchonæ*, Fée, included by Nylander under his *Verr. nitida*.

PYRENULA MARGINATA, Hook. — Trunks, Oahu (Mann). Var. SANTENSIS, Nyl. *Verrucaria*, Tuck. *in litt.* — With the last, from which it differs in its smaller apothecia, and cocciform spores.

PYRENULA LEUCOSTOMA, Ach. — Trunks, Oahu (Mann). — Identical with a Japanese Lichen determined by Dr. Nylander.

PYRENASTRUM ASTROIDEUM (Fée) Eschw. — Trunks, Oahu (Mann). Var. DUPLICANS, Nyl. — With the last (Mann).

Lichenes Collemacei.

LEPTOGIUM TREMELLOIDES (Ach.) Fr. — Hawaiian Islands (*L. marianum*, Mont., *e* Nyl.) Nyl. — Oahu (Mann). Var. LACINIATUM, Tuck. — Oahu (Pickering), Tuck. l. c.; (Mann).

LEPTOGIUM SATURNINUM (Dicks.) Nyl. — Trees, Ulapalakua, East Maui (Mann).

LEPTOGIUM CHLOROMELUM (Sw.) Nyl. — Oahu (Mann).

LEPTOGIUM PHYLLOCARPUM (Pers.) Nyl. — Oahu (Mann).

Addenda et Corrigenda.

John Miers, in the Annals and Magazine of Natural History, 19, n. 109, Jan. 1867, sustains Loureiro's genus *Nephroica* as distinguished from *Cocculus* by the cleft petals and other characters, and his genus *Holopeira*, distinguished from both the others by the broad, emarginate petals and the peculiar perforated putamen, etc. He then arranges the Hawaiian species (of which he distinguishes three) thus: —

NEPHROICA OVALIFOLIA, Miers. *Cocculus ovalifolius*, DC. *C. umbellatus*, Steud. Menispermum ovalifolium, Vahl., and refers to a specimen in herb. Brit. Mus., and to Barclay's, 1271. According to him, it also grows in Corea.

NEPHROICA FERRANDIANA, Miers. *Ferrandia oleifolia*, Gaud., *Cocculus Ferrandianus,* Presl. Apparently confined to the Hawaiian Islands.

HOLOPEIRA CONCHOPHYLLA, Miers. *Cocculus Ferrandianus,* Seem. (non Gaud.) Fl. Vitiensis, and refers to specimens in herb. Hook. (Hillebrand) and Seemann's n. 2281.

Myonima umbellata, referred as a synonyme to *Canthium lucidum,* should, according to the specimens (ex Seemann, Fl. Vitiensis), be referred to a *Straussia.*

Under number 400, for *S. Freyienetianum* read *S. Freycinetianum.*

Under number 312, insert (M. & B. 40); 324, insert (M. & B. 305); 489, insert (M. & B. 36).

After 422 insert 422^a. EUXOLUS VIRIDIS, Moq. l. c. p. 273. (M. & B. 67).

Five hundred and seventy-second Meeting.

October 9, 1866. — MONTHLY MEETING.

The PRESIDENT in the chair.

Professor Horsford presented a communication on the popular doctrine that sunlight retards combustion.

Professor Henry presented a communication on the causes and physical nature of fogs, and on the means of warning vessels, befogged on our coasts, by sound-signals.

Five hundred and seventy-third Meeting.

November 14, 1866. — STATUTE MEETING.

The PRESIDENT in the chair.

The Corresponding Secretary read letters relative to exchanges; also letters from Professor Noah Porter of Yale College, Chief Justice Ira Perley of New Hampshire, and Dr. A. W. Chapman of Apalachicola, in acknowledgment of their election into the Academy as Associate Fellows.

The President called the attention of the Academy to the recent decease of Mr. Samuel Swett of the Resident Fellows.

The President announced that since the last meeting Mr. George Peabody had founded an important institution for the